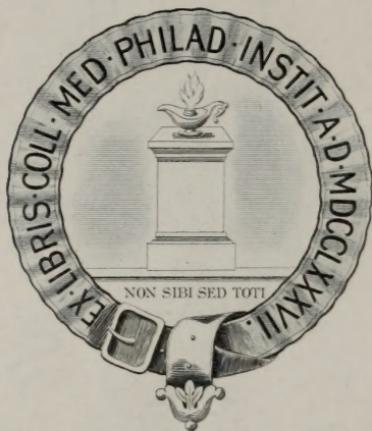


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JULY - DECEMBER, 1902.

BLEYER, A. S., St. Louis,	-	-	-	-	-	265
BROKAW, A. V. L., St. Louis,	-	-	-	-	-	321
CHAPMAN, H. N., St. Louis,	-	-	-	-	-	367
COOKE, A. B., Nashville, Tenn.,	-	-	-	-	-	20
COUGHLIN, W. T., St. Louis,	-	-	-	-	-	182
CROSS, R. O., Kansas City, Mo.,	-	-	-	-	-	30
DONELAN, E. A., St. Joseph, Mo.,	-	-	-	-	-	184
ENGMAN, M. F., St. Louis,	-	-	-	-	-	401
FISCH, CARL, St. Louis,	-	-	-	-	-	423
FLICK, L. F., Philadelphia, Pa.,	-	-	-	-	-	25
FOSTER, HAL, Kansas City, Mo.,	-	-	-	-	-	96
GEIGER, C. G., St. Joseph, Mo.,	-	-	-	-	-	257
GELLHORN, GEORGE, St. Louis,	-	-	-	-	-	336
HARDAWAY, W. A., St. Louis,	-	-	-	-	-	161
HINCHEY FRANK, St. Louis,	-	-	-	-	-	86
HOFFMAN, PHIL, St. Louis,	-	-	-	-	-	13
HOMAN, GEORGE, St. Louis,	-	-	-	-	-	254
JOHNSTON, G. F., Lakin, Kansas,	-	-	-	-	-	101
MOORE, J. T., Galveston, Texas,	-	-	-	-	-	81
NIERTERT, H. L., St. Louis,	-	-	-	-	-	93
RASSIEUR, L., St. Louis,	-	-	-	-	-	107
REDER, FRANCIS, St. Louis,	-	-	-	-	-	167
ROBINSON, BYRON, Chicago,	-	-	-	-	241, 353, 426	
RUNGE, E. C., St. Louis,	-	-	-	-	-	98
SAUNDERS, E. W., St. Louis,	-	-	-	-	-	415
SHELTON, F. B., Victoria, Texas,	-	-	-	-	-	178
SMITH, ELSWORTH, JR., St. Louis,	-	-	-	-	-	262
WINTER, F. A., Jefferson Barracks, Mo.,	-	-	-	-	-	1
ZAHORSKY, JOHN, St. Louis,	-	-	-	-	-	418

ST. LOUIS

COURIER OF MEDICINE.

VOL. XXVII.

JULY, 1902.

No. I.

ORIGINAL CONTRIBUTIONS.

Some Observations on Gunshot Wounds, During the Spanish-American and Philippine Wars.

By FRANCIS A. WINTER, M.D.,

JEFFERSON BARRACKS, MO.,

CAPTAIN, ASSISTANT-SURGEON U. S. ARMY; LATE MAJOR AND SURGEON,
37TH INFANTRY, U. S. VOLUNTEERS.

IT has seemed to me that a detailed narration from a case-book might possess less of interest, for the gentlemen of the Society, than would some discussion of the wound effects of the small caliber bullet, used in the modern arm, as contrasted with the larger missile, formerly employed. It might be in order after this, to note a few cases.

There has been a steady effort, on the part of ordnance experts, at reduction of caliber, with attainment of greater velocity and penetration, in the modern military arm, and this has resulted in our own country, in a gradual reduction from the old 50-caliber soft lead bullet, to the modern missile made of a leaden core, clad in a steel jacket, 30-caliber, and endowed by its charge of smokeless powder with an initial velocity of

Read before the Medical Society of City Hospital Alumni, March 20, 1902.

2,000 feet a second and a penetration of about 16 inches of solid oak.

The bullet has a cylindro-conoidal shape, adapted from the bullet which succeeded the original round ball, used in the smooth-bore gun.

To secure greater steadiness of flight, the rifling in the arm has been multiplied and the rotary motion contributed to the bullet thereby preserves its uniform progress along a comparatively flat trajectory, instead of giving us the rather parabolic flight, characteristic of the old leaden bullet.

It is on account of the multiplied rifling that the hard jacket is put on over the lead core, and even this jacket takes on a perceptible grooving, from its rapid flight through the rifle.

The bullet, of course, is very much lighter than its predecessor, weighing about one-half as much.

The modern arm of all nations conforms in a general way to this standard; there are minor differences of caliber, velocity, etc., but there are not material divergences presented by any arm, from this general type.

This gun is effective at 4,000 yards, and when it was introduced much was expected from its use at long ranges, and it was surmised that material results would follow its employment, under these conditions.

But is always a great deal of error in the estimation of distances in battle and I do not think our troops suffered greatly either in Cuba, or the Philippines, from the increase of range.

It was estimated during the Franco-German war that it took something like 400 shots to wound one adversary. The tactics of those days provided for mass formations of men and close range-fighting; now-a-days the order is extended and I fancy the ratio of hits to shots, is even less than during the conflict instanced.

When a man sights a rifle at 2,000 yards the accuracy of his fire is not much of a factor, particularly when it is remembered that the trajectory of a bullet rises to something like 200 feet, under such sighting. Most of the wounds I have had to deal with, have been received at close range and by that I would be understood to mean 500 yards, or less, at which distances variation of trajectory, etc., cut little figure.

I remember that I read prior to the Spanish war, and with a good deal of foreboding and anxiety, about the effects of this small caliber of bullet on bone, when the subject of the

wound was within 600 meters of the man behind the gun.

At the present time I have a much more wholesome dread of the old-fashioned, large caliber, Springfield bullet, with its 1,200 feet velocity, than for the more modern missile, and this belief is the outcome of my observations of the two classes of wounds.

There has been a vast deal of discussion and much experimentation by medical and ordnance experts, on this question and every one who reads through it must conclude I think that even at this date the matter is largely *sub-judice*.

Observers have differed very much in their conclusions, and I am of the opinion that the bullet is about as uncertain as any quantity with which surgeons have to deal, and I have ceased being disappointed or very much surprised, by the utter want of uniformity in its results.

However, some features have impressed me as being fairly constant. Wounds of the soft parts present some differences, between the large and small calibers varieties, but they are of minor import.

The small bullet makes a very clean, neat puncture and when uncomplicated, has not the same surrounding contusion, coming from the large bullet. The hole is drilled clean, as a rule, unless the missile meets some obstruction, under which condition the wound of exit is not apt to be quite so large.

In wounds of the viscera the same holds good, as a rule, the small puncture of the jacketed bullet rendering resort to extensive resection of intestine, for instance, less frequent than in the case of the large, irregular, contused wound, from the larger bullet. Exception to this is found in the case of the brain.

There is very diffuse laceration of the brain substance and the comminution of the skull is wide spread, as a result of the so-called hydraulic effect, on semi-fluid material, in an unyielding encasement.

Just how this effect is produced does not seem to be definitely settled, and the physicists will probably continue to discuss it for some time to come.

Theoretically, injury to blood vessels should present more hemorrhage from wounds of the small bullet, because of the clean-cut character of the vessel injury.

The wounds of the larger bullet, involving as it does greater injury to the intima should present more favorable

conditions for the spontaneous arrest of hemorrhage. Practically I have not found material differences, in the different classes of wounds.

My most striking impression of a different vulnerating effect has been gotten by comparison of wounds in long bones, such as the femur, tibia, etc. In this matter, my observation leads me to doubt the accuracy of much that has been written, about the small caliber bullet. My expectation was, that any long bone struck squarely at close range must of necessity be shattered and comminuted very extensively.

I recall that my first questioning the uniformity, or even frequency of this result, came about at Santiago, Cuba, where I found that the small caliber bullet was not so thoroughly a "devil of a fellow" as my reading had let me to believe.

I almost concluded that the Spanish were using defec-tive powder in that fight; case after case up, showing so little of the result I had feared. Further observations of a number of wounds to the long bones in the Philippines, both from the Mauser (small) and the Remington (large) bullet have strengthened my impresion into a conviction, that the gravity of a wound to the long bones, from the small bullet, is not ordinarily comparable to that which goes with the larger missile at short ranges.

Of course, this is a conclusion based upon my personal observations, and I make it, fully cognizant of the fact that there are those of equal, if not of greater experience, who will dissent from my view of the matter.

Time and again in following up small caliber bullets, I have found clean, little punctures without material fracturing; and what breaks there were, probably sub-periosteal, presenting little difficulty in healing under a aseptic dressing. On the other hand a 45-caliber bullet seldom or never failed to produce a wide-spread comminution, and I do not recall a case of this kind, where I did not have to remove more or less non-viable bone.

Again, I think that most observers will bear me out that a large bullet striking a bone near a joint, is almost certain to produce fracture into the joint, while the smaller bullet seldom manifests this result.

The soldiers know this and a song of theirs describes,

among other things, how "Billy got away with a little wee bullet, but a big one fixed his clock."

As to the element of shock, I am of the opinion that the smaller bullet inflicts much less shock, this being especially true in the case of abdominal wounds, I recall the case of a solider who was shot at 800 yards at the battle of Zapote in June, 1899. A Mauser bullet entered the neck just above and behind the clavicle and traversing his thorax and abdomen made an exit near the anus; he lived over twelve hours and exhibited little shock.

An interesting feature of the small bullet, wherein it differs from the larger missile, is contributed by the jacket. This jacket of thin steel or cupro-nickel, becomes very much torn by contact with rocks, etc., during its flight, and ricochet shots are apt to produce very ugly and intractable wounds. I remember a soldier who was hit by such a bullet in Cuba, and a year afterwards I took a thin piece of metal out of his back, four inches from the original wound; several similar pieces had been taken out before I got this one, and I hope it was his last one.

The jacket is often torn and flattened out into such shapes that it is unrecognizable, and the irregular sharp corners and angles are capable of causing very material laceration.

Again, the very great velocity and penetration of this bullet make it disregard most of the things about ones person, which have been adverted to as life-saving agencies. For instance when this steel-clad visitant encounters the watch in a man's pocket, the works of that particular time-piece are apt to commingle with some of the numerous muscles in the back of the individual who carried it.

The leaden bullet will ordinarily flatten out against a bayonet-scabbard, or a belt full of cartridges, and so be arrested in its course. I have removed pieces of bayonet-scabbard and the copper casing of cartridges from soldiers, who had been struck in the belt, with a Mauser bullet, and in one case I found a fragment of a bayonet-scabbard, quite deeply imbedded in the muscles of the loin. I have been much impressed with the importance of this phase.

Small caliber wounds heal wonderfully well, though everything must, of course, depend upon the man who first dresses the wound.

The general use of the first aid packet has unquestionably

been of incalculable help to the modern military surgeon and the superb aseptic results which came to us, almost steadily, in uncomplicated wounds, were largely due to the rapidity and effectiveness of the first aid dressing, applied on the firing line; I have repeatedly seen extensive wounds left under the original dressing for ten days, and upon opening them up, an ideal aseptic result was found.

All soldiers are supposed to be instructed in its use, and the regulation is usually carried out very effectively.

It may be appropriate I think to say a word in this place, regarding immediate surgical work in battles and just after them. Most observers are agreed that the modern bullet with its possible flight of 4,000 yards, prevents the establishment of anything like a well equipped operating station within that zone. When we consider the obstacle to such stations presented by modern field-artillery, we find an even greater incentive, to remove our stations further back.

Cases demanding extensive and elaborate surgical intervention, must necessarily reach the field hospital late, and it is simply impossible to give the time and detail, required for an average capital operation to one man, when there are some hundred of others, demanding immediate treatment.

I saw one abdominal section for penetrating wound, at the battle of Santiago, and that confirmed me in my notion, that the time and place were not suited for such exploits. One can imagine ideal conditions, wherein these procedures are possible, but there isn't very much of the ideal, about the conditions coming to a field hospital after a material fight, and force of circumstances prevents ones doing a great deal for any one man, at the cost of being unable to do a little for a great many.

This position is borne out by the experience of the British in South Africa, and their surgeons have found little to encourage attempts at radical surgery at any point short of the base, when it is generally too late to accomplish much, especially in wounds of the viscera.

We may now pass, I think to the consideration of a few cases, illustrating in some measure the observations set down in the foregoing remarks, and presenting some features of interest.

CASE I.—A private of the 15th Infantry was shot in a fight on September 17, 1900. He arrived at the Santa Cruz,

Laguna hospital about ten hours after being wounded, dressed under first aid dressing. Examination showed a penetrating wound of the abdomen, point of entry in left mammillary line, an inch below rib margin, exit three inches internal, and somewhat higher, in epigastric region. Missile Remington, 45-caliber.

He had sustained three other Mauser wounds in the shoulder and thigh. Soldier presented little shock, in spite of his multiple wounding, and the point of especial interest lay in the extrusion into the exit of the abdominal wound, of quite a large piece of omentum.

The case came under the care of Contract Surgeon Fitzsimmons, U. S. A. and he trimmed off the contused tabs of omentum, restored the continuity of the serous surfaces and sutured the external wound with a very gratifying result, the soldier being invalided home six weeks later.

I doubt very much if the omental prolapse in this case, would have occurred had the missile been a small caliber bullet; such a result might be imagined in the event of a lateral impact, of such a bullet, for that this factor of lateral impact is one of great importance in accounting for disturbances of place and relation, without actual penetration of the mobile viscera, is well recognized in the annals of gunshot surgery of the abdomen. It explains a great deal of the immunity from serious harm, which is otherwise inexplicable.

Makins ("Surgical Experiences in South Africa") figures a case similar to this, wherein, post-mortem, a process of omentum was found lodged in the wound of exit, without having been manifest during life. The man died from suppuration following a wound of the colon.

Commenting on the case, Makins' remarks, that "it is impossible to conceive, that a small caliber bullet, coming into direct contact with omentum, could do anything but perforate it" and that "only lateral impact could have caused it"

The extrusion of the omentum is much more comprehensible, with the larger, slower moving bullet of the Remington type, than with smaller bullet of higher velocity.

CASE II—A soldier of the 37th Infantry was wounded in a skirmish fourteen miles from Santa Cruz and was brought to my care, about 12 hours later. First Aid dressing. On examination I found that he had been shot while in the kneeling posi-

tion, busily engaged in repelling an ambush attack. He was aiming his piece, at the time he was shot.

I found a circular puncture exactly in the median line of the abdomen, about an inch above the symphysis; no wound of exit.

The man complained of no particular discomfort, had no dysuria or hematuria, but said he had vomited twice after being shot, before reaching the hospital.

After examination, (which did not include any probing) the soldier told me he felt some "stiffness over his left hip-joint" and I was very much surprised to find that he was the unconscious and unwilling host of a hard body, lying just under skin in that vicinity, and bearing all the characters of a subcutaneous bullet. I cut down on it, and drew out a cast-steel, or iron projectile, about 40-caliber, and measuring about an inch and a half in its long diameter by about one half inch transversely.

The missile had a conical tip and was simply another instance of the polymorphism, of the Philipino projectile; the result was one of the most unique I have encountered, in my experience of gunshot wounds.

This bullet had traversed the abdominal wall, or the abdomen itself, without having struck any resistent structure to deflect it, and without leaving the slightest contusion, or sign, to mark its passage through the structures.

The aperture of entry was apparently made by a bullet head on, and striking squarely, and not, as the result must lead us to believe, by a missile striking the wall at an acute angle, from a lateral position.

From the experience of bullet paths, in other cases it seems to me, that we had a reasonable basis for believing that such a wound should show, either some swelling from the severed muscle fibres of the rectus and external oblique, or, the passage being made in the subcutaneous tissues, some line of contusion along the path.

Makins (*loc. cit.*) figures such a case and the tumors, resulting from the injury to the rectus and oblique muscles are very well shown.

Cases of this character emphasize the uncertainty of abdominal wounds. I thought that this bullet had penetrated, and I think that the soldier has probably to thank that pain in his hip, that his abdomen was not explored.

I remember that I was just about to order the instruments when he told me of his pain in the hip, I regret that I could not keep the missile, but the soldiers pride in keeping such things is a standardized matter, and I could not disregard this man's earnest desire to carry it away, as a souvenir.

CASE III.—A private of the 37th U. S. Volunteers was shot at close range in an ambush. Wound of entry one inch below the left elbow-joint, outer aspect of forearm, exit corresponding point, internal surface of forearm; entry small puncture; exit size of silver half-dollar; Mauser.

Seen a few hours after the infliction of the injury, there seemed to be no reason for material interference with the wound. There was some evidence of comminution of the radius, but I decided to treat it conservatively, and hoped that osteoplastic processes, in the probable absence of any infective agents, would be favored by a loose gauze strip in each wound. The forearm was put up at a right angle, in a wire splint, the hand in the mid-position.

For a week the soldier did very well but a sudden rise in temperature indicated trouble and his immediate surgeon, Dr. C. W. Farr and myself, inspected the wound, to find a diffuse reddening and some edema in the vicinity of the wound. Intervention was clearly indicated. The original wounds were enlarged by deep incisions and we removed a few pieces of blue flannel shirt, and a quantity of bone fragments from both sides: no pus was found. Fully an inch of the radius was taken out, about the vicinity of the bicipital insertion.

The radial head was left intact. The ulna was only partially comminuted, enough being left to support the forearm. The entire region of the elbow was enclosed in a carbolic compress, 1 per cent, and again put in the splint.

The following day an additional rise of temperature, with evidence of sepsis called for another inspection, and we found an extension of the boggy infiltration above the elbow-joint. This had involved the lymphatics to such an degree that we considered amputation, but, compromised on free incision, of the inflamed area, and with extensive drainage, put the arm up as before, in a wet dressing.

From this time on, the progress of the case was very satisfactory and the soldier was invalided home nine weeks after injury. When he left hospital there was some limitation in

the movements of flexion and extension, but passive motion was improving this, manifestly.

This is a simple uninteresting case, until we come to the confession of error which it involves; from that standpoint it has been a valuable one to me; it decided me to adopt a course in the handling of gunshot wounds of the long bones, which has saved me some embarrassment and a good deal of regret.

I remember that during the Santiago campaign in Cuba, immediately after the big fights, we had to avoid etherization whenever we could. We were shy on two counts—surgeons and time. Less than ten of us were confronted with the problem of giving appropriate surgical relief to some six hundred wounded and the circumstances were not propitious for what Senn terms “pedantic details.” I fixed up a gunshot fracture of humerus without going into it thoroughly, and the subject, a very jocular officer, joked me afterwards, because a New York surgeon took a piece of blue flannel shirt out of his arm, about six weeks after my exploit with him.

That experience rather shook my faith in the policy of giving such wounds any benefit of a doubt, and the case now under consideration converted me to the belief, that no wound sustained through clothing and apparently involving bone should go unexplored and cleansed out in its depths, provided, of course, such measures can be taken under good aseptic precautions. As a first aid measure strictly speaking, the practice is a bad one.

I do not think severe comminution with inevitable denudation of bone and separation of fragments, offers any chance for spontaneous reposition and healing by osteoplastic processes, and it has become my habit to remove fragments in such gunshot wounds. Should resection be required it can be done later.

Certainly no harm can come from cutting down on the bone, under asepsis, and it makes ones efforts intelligent, instead of grafting upon them the quality of work in the dark.

CASE IV.—The following case illustrates, I think, the propriety of getting at the bottom of the class of wounds it typifies, and is one of a number, which I treated in this manner.

A soldier of the 15th Infantry was shot at twenty-five yards in a night attack, entry, antero-interior aspect of left arm, two inches below the shoulder-joint—No exit. Remington 45-caliber.

Enlarging the wound, I found a number of pieces of blue shirt and a very extensive comminution of the humerus. The bone was broken into twenty or thirty small fragments and there was only a small bridge of bone tissue left intact, on the posterior aspect, behind which the bullet was lodged, and whence it was removed with a good deal difficulty. The axillary vessels were uninjured.

I removed the bone fragments and dressed the wound under a profuse gauze pack. I was gratified to find the case go on to convalescence with scarcely a symptom, and under a plaster splinter he had secured a fairly good arm when he left the hospital about two months afterwards.

I do not think the case would have been uneventful, to say the least, had it been allowed to go on without such interference as it received.

CASE V.—A private of the 37th Infantry was shot under rather unique circumstances, and I trust I may be pardoned, for reciting them rather fully.

The soldier's company had been sent out to round up a "barrio" or village, supposed to harbor a number of insurgents. His sergeant investigated various houses, and where there was no cause to suspect much left one soldier in the house to search for rifles, etc., the rest of the squad moving on.

The particular house to which this man was assigned, had no occupant, save an "old woman" who sat in a corner, betokening great fear. The soldier went about his search for contraband, and when his back was turned, the aged lady speedily developed into a very active Philippino "hombre" who fired a Remington 45-caliber bullet into the posterior aspect of the man's left leg, at about three paces. (It may be interesting to state that a long Tennessee soldier made a very pretty wing-shot on this "unsexed female" as he jumped from a window in the house, after his change of sex).

The soldier's wound was dressed with a first aid packet and splint, and he was brought over thirty miles to Santa Cruz, arriving about forty-eight hours after the reception of his injury.

Examination showed an absence of pulsation in the posterior tibial and a gangrenous state of affairs about the wound. I amputated below the knee-joint and therein made a mistake, seeing that I had to do a subsequent amputation through the lower third of thigh.

This is the only case of gunshot wound in which I found amputation necessary. My excuse for narrating it, is found in the illustration it furnishes, of the intense insult, inflicted upon tissues by the large lead bullet, at close ranges.

The tibia and fibula were literally ground into fragments, through the upper half of their extent and the laceration of the soft parts was so severe, that they were devitalized beyond anything I ever saw in gunshot wounds. I remember getting the impression when I saw this wound that it very much resembled the rail road accident cases, which we used to see in the City Hospital. I could not but contrast this case with the many clean punctures of the femur and humerus, which I saw follow in wounds from the smaller bullet.

The ranges were all short; in fact we saw very few wounds in the Philippines which were not delivered within fifty yards, for the fighting we had to contend with, was almost altogether of the ambush variety wherein the assailing force shoots a volley from the under brush and then decamps, to put on white clothes and welcome you as the "mucho amigo," a few minutes after trying to "pot" you in the road.

Generally speaking it was my observation that wounds healed kindly in the tropics and that infection was the exception, following any attempt at asepsis. Discouraging as efforts to obtain this state in field surgery, may seem at first sight, we learned to look for it, following the use of the first aid package, with practically no interference with the wound, until it could be done under proper aseptic conditions.

Provided the initial insult and immediate infection were not too great, we generally found clean wounds, and modern surgery finds a steady and oft recurring triumph in those gunshot wounds, which heal under an original first aid dressing.



Fig. 25. Fragment of photograph advertisement of an instructor of physical culture. Observe marked deformity of right great toe.

Fig. 26. Hammer-toe caused by short shoes.

Fig. 27. Hammer-toe caused by pointed shoes.

Fig. 29. Correct outline for inner sole of shoe to fit an undistorted foot. In center is shown an impression of the weight-bearing portion of foot. Solid line shows tracing of outline of foot; dotted line represents correct shape for inner sole.

Fig. 30. Feet of high caste Chinese lady, showing typical deformity from 1 to 10.

The Effect of Foot-Wear Upon the Form and Usefulness of the Foot.

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(Concluded from page 409 Last Month).

Another product of the tight shoe is the so-called ingrowing toe-nail. The flesh is compressed between the shoe-leather and the nail. Inflammation ensues with the consequent over-growth of the soft parts.

Hammer-toe is a deformity frequently produced by shoes that are either too short or too narrow at the toe. The short shoe over-extends the metatarso-phalangeal joints and flexes the interphalangeal ones; in time the soft structures are shortened, the bone ends accommodate themselves to the forced position, and permanent deformity results (Fig. 26). In this type, as a rule, all the toes are affected. The narrow shoe produces this condition by forcing the great toe into the place normally occupied by the second, which assumes the hammer-toe position to make room for its larger neighbor (Fig. 27). This is the reason that when a single toe is affected, the second is most frequently involved.

The high heel, especially the one placed well forward, compels the wearer to stand largely on the front of the foot, which must bear more than its proportionate share of the body weight. The habitual wearing of high-heeled shoes leads to shortening of the calf muscles through accommodation to the continually assumed attitude. This is probably the reason that a large percentage of middle-aged women can not dorso-flex the foot to quite a right angle without bending the knee. "Unless dorsal flexion of the foot beyond a right angel is possible, it is impossible for a person to complete the step with the leg straight behind him and the feet pointing forward. Eversion of the foot is necessary, and a completion of the step by roll-

ing over on the inner side of the foot. This, of course, tends to produce pronation and breaking down of the arch." (Lovett, "Transactions American Orthopedic Association," Vol. VIII). The elevated heel, especially when combined with a narrow toe, leads to breaking down of the anterior or transverse arch of the foot by throwing additional body-weight upon the metatarsal heads. The painful affection, called metatarsalgia, first described by Morton, of Philadelphia, is now known to be due to depression of this arch. The spring, or turning up of the front of the sole of the conventional boot, Fig. 28, by hyper-extending the toes at the metatarso-phalangeal joints, helps to depress this arch.

I need hardly mention the common though painful condition, sometimes dignified by the name clavus, but ordinarily called corns, caused by friction of an ill-fitting boot. Most of us are, no doubt, quite familiar with this affection. It is a trivial affair but, nevertheless, the cause of much misery. Tight shoes, by splinting the feet, interfere with the normal function of the muscles. This, as pointed out by Lane, deprives the limb of an important influence in forcing the blood upward through the deep veins and places a disproportionate strain upon the superficial ones. It is probably one of the causes of varicose veins, which frequently result in chronic ulcers so common in our clinics. The tight shoe, also, by compressing the toes and interfering with their circulation, may predispose to chilblain and frost-bite.

It is plain that the wearing of improper shoes may have more than a local pernicious influence. The many deformities and the weakness they give rise to, lead to a lack of exercise, and, in consequence, the general health suffers.

Predominant styles of foot-wear are illustrated in Fig. 28. A and B are two with copyrighted names, extensively advertised as reform and hygienic shoes. Observe that the toes are quite pointed and the heels comparatively high. The shank is weak and narrow and placed near the middle of the sole. These are at present very popular styles. Style C, has a large circle of admirers. It is the typical French shoe; short, narrow, very high heel placed well forward, and extremely pointed toe. It is much used as a dress shoe, though not uncommon for street wear. D, represents a type of child's shoe responsible for serious injury to many feet. Happily, children's shoes as pointed as this are not worn as much to-day as they were a

few years ago. Most people consider the style pictured in E, as a very sensible one. It is, indeed, far less pernicious than D, though an outline of a child's normal foot for comparison must convince that this shoe exerts considerable compression on the toes. F and G are popular among men. Though not as bad as some shoes worn by women, they do not allow sufficient room for spreading the toes. One common fault is to be observed in all—the front of the sole turns upward in such a way as to hyperextend the toes and cause undue pressure upon the ball of the foot. This leads to depression of the transverse arch, which is normally present under the heads of the metatarsal bones.

One can, to-day, find in some shops fairly good foot-wear for men and children, but the demand for it in St. Louis is not very great. Very few shoe dealers, however, carry a stock of proper foot-wear for women. I have often been told that it is difficult to sell and, therefore, not profitable. Nevertheless, such can be bought and its purchase should be encouraged.

Casual observation will show how common is the habit of wearing short, narrow-toed and high-heeled shoes. In an afternoon's walk the writer counted 168 children, of whom 142, or $85\frac{1}{2}$ per cent, were wearing shoes with more or less pointed toes; 96 women who were all wearing pointed foot-wear, and 66 men, of whom 45, or 68 per cent, were wearing shoes tending to the toothpick variety. Of the children only about 26 wore the extremely pointed, and spring heels were the rule. The women, however, very generally wore the decidedly pointed type, and the typical French heel was much in evidence. Among men the extreme point was rarely seen and is apparently out of fashion. Many wore the style shown in F, while that shown in G, was quite common.

Though foreign to the title of this paper, a few words about the proper shape of shoes will not, perhaps, be out of order.

The front of the inner sole should correspond in shape to and be a little wider than the front of the foot. It should allow for adduction of the fore part of the foot at the mid-tarsal joint and for separation of the toes, especially for inward motion of the great toe. To fit a normal foot, the inner edge should be straight. The shank should be wider than the weight-bearing portion of the foot-sole at this point and should be placed well to the outer side and not in the middle, as is so

frequently done. The posterior part should follow the outline of the heel. The length should be a little greater than that of the foot when bearing the body-weight. The correct shape for the inner sole of a shoe to fit an undeformed foot is shown in Fig. 29. Its shape may differ according to the character and degree of existing deformity, but care should be taken that the front of the inner sole is always somewhat wider than the corresponding part of the foot, and it should be changed whenever necessary to meet any improvement that may occur in the form of the foot. The front of the sole should not have the upward turn or spring, which is universal in conventional shoes and which tends to obliterate the transverse arch; but it should be flat both from before backward and from side to side. The upper leather should be sufficiently full to allow for the thickness of the toes and for their individual movement within the shoe. It should, though, fit so closely over the instep as to prevent the shoe from slipping back and forth. For this reason a lace shoe is preferable, as its tightness can be regulated. Children should wear spring heels, a custom which it would be well to continue throughout life. Adults who are accustomed to the use of heels would find it awkward to walk without them. They should, when worn, always be very low, broad and flat.

The foot, especially in the young, is very plastic, continued pressure can give it almost any shape. A familiar example is the foot of the high caste Chinese lady. By a system of bandaging, begun at the fifth or sixth year, the toes are made to approach the heel. The foot is, in fact, forced into a position of exaggerated calcaneo-cavus, so that the toes and heel may fit into a dainty little shoe no larger than a teacup. What matters it if the lady can not stand still, but must constantly step backward and forward to retain her balance, or that she can barely walk at all without support if, only, she possesses a pair of "golden lilies," as such feet are fancifully called. Fig. 30 is a photograph of a pair of such horribly deformed feet, and Fig. 31 a photograph of shoes worn on these feet. Fig. 32, copied from an illustrated magazine of the war with China, shows natives leaving Tien Tsin. In front are seen some high caste women, wearing such shoes, holding on to each other evidently for the purpose of facilitating locomotion which, under less exciting conditions, they probably rarely indulged in. Behind them is seen a Chinese woman of the

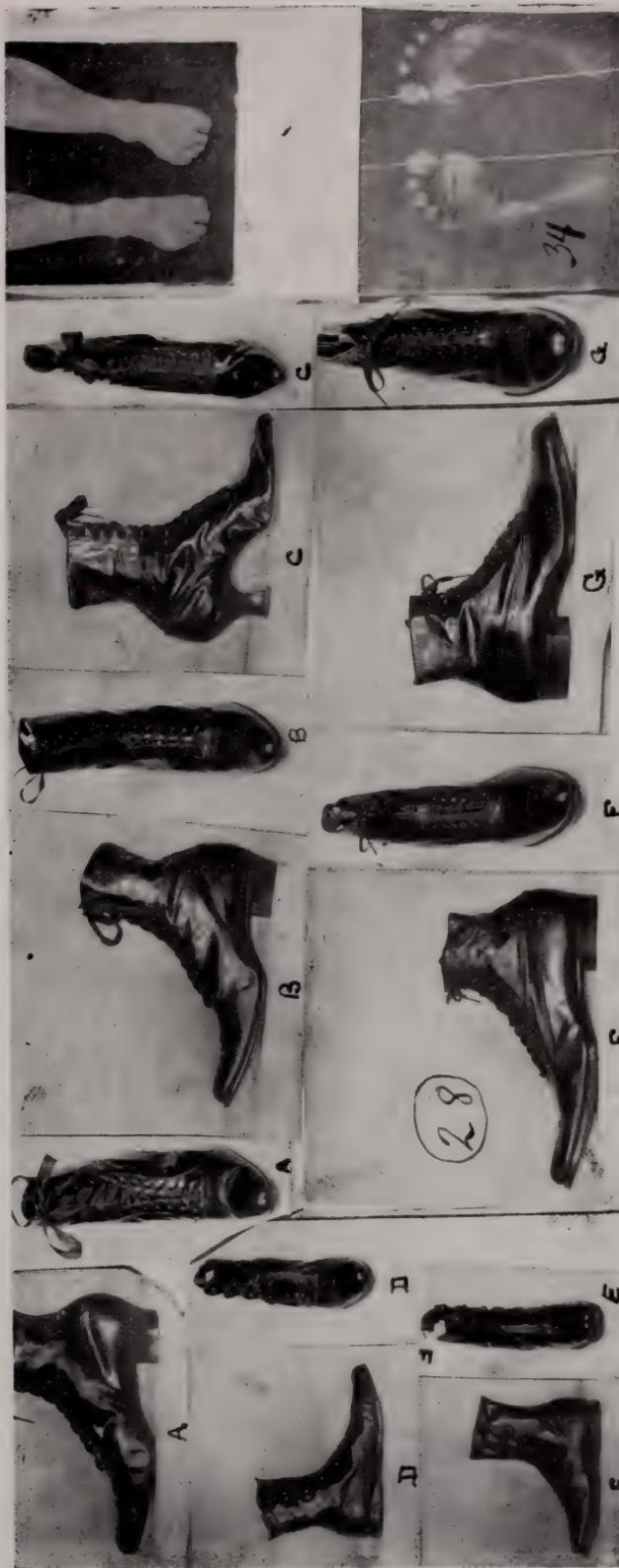


Fig. 28. Predominant styles of modern foot-wear.

Fig. 34. Impressions of soles of 7-year old girl. Right foot had been without a shoe for two months and a half; the left had been wearing an ordinary child's shoe. Toes of right are more separate and ball of foot is one-fourth inch wider than left. Also observe difference in direction of long axes of great toes.

Fig. 35. Foot and ankle development of natives of St. Kilda. The one on the left represents an English naturalist's (Mr. Kearton's); that on the right a St. Kildan's. Both men were about equal in size.

working class whose feet do not present such deformity. She is carrying a child on her arm and walks with ordinary ease. The magazine illustration was not made for the purpose of showing these peculiarities in Chinese feet and foot-wear, yet the writer considered it of interest from this point of view. Why smile at the absurdity of the Chinese lady? How about some women, and men too, outside of China, who encase their "golden lilies" in shoes that are little more than half as wide as Nature indicated they should be and often much too short? What matters it if they do suffer from deformed, flat, weakened and painful feet if, only, they can place them in shoes much too small with toes that vanish into nothingness; and perch them on a fancy, slender, high and insecure heel? Here, too, the binding begins at a very tender age. The difference is not so much in kind as in degree.

Fig. 33, a photograph of casts of very troublesome feet, is an extreme example of the deforming and disabling influence of improper foot-wear. It shows marked flat-foot and pronation, shortening of the tendo Achillis, hallux valgus, bunions, ingrowing nails and hammer-toe, great crowding of all the toes and their deviation from the lines of their respective metatarsals, corns and callosities, and the skin of the soles thrown into folds from extreme compression. Imagine the source of pleasure (!) that these feet were to their owner, who was far more sensitive about the appearance of her foot-covering than about the shape of its contents. Suffering drove her to the physician, whose advice she only partially and reluctantly followed. As already remarked, it is the shoe and not the foot that we admire. Little do we know or care about the weak, deformed and callous foot hidden within the neat-appearing boot.

An interesting illustration of the change that may occur in the shape of a young foot from a few months of shoe wearing is shown in Fig. 34, a photograph of impressions of the weight-bearing portions of the soles of a girl, seven years old. An injury to the right ankle prevented the child wearing a shoe on that foot for two months and a half. At the end of that time the impressions here shown were taken. Observe that in the right foot, which had been bare so long, the toe impressions are more widely separated than in the left, which had been wearing an ordinary child's shoe. Also, that the long axis of the right great toe prolonged backward strikes as it

should, the center of the heel, while that of the left falls somewhat to the inner side. This is due to the left great toe being displaced toward its neighbor. The width across the ball of the foot is considerably greater in the right than in the left. Measurement determined the difference to be seven millimeters. During the time that the right foot was without a shoe it had a chance to regain the normal form while its fellow was becoming more distorted by what is ordinarily called a good shoe.

An example of how the foot may be developed by free use of its muscles is shown in Fig. 35, an illustration from Richard Kearton's book, "With Nature and a Camera." The photograph was taken on the island of St. Kilda, where the natives climb steep cliffs in search of the eggs of birds that build their nests in these elevated places. It represents Mr. Kearton's foot photographed side by side with that of a native corresponding in size and weight to himself. It shows the native's splendid foot and ankle development as compared with his own. Observe the difference in the straightness and separateness of the toes.

The shoe is not the only agent active in deforming the foot. The stocking also deserves some attention in this respect. It should never be worn too short or too tight. In Fig. 36, the solid line shows an outline of a naked foot bearing the body-weight, while the dotted line within represents the same foot compressed by a tight, short stocking. Fig. 37, shows the same foot in a stocking originally the same size and shape as the other, but which had been worn and washed a number of times. In the old stocking the compression, while not so great as in the new, is still enough to prove harmful. The fault of wearing stockings too small for the foot is a very common one. Those constructed as rights and lefts are better than the ones which are interchangeable. They should be large and elastic enough to allow expansion of the foot in walking. Fig. 38, illustrates the average range of expansion. The inner solid lines show outlines of feet in repose, and the outer dotted ones the same feet bearing body-weight. This diagram represents average adult feet, whose elasticity has been impaired by years of ordinary shoe-wearing. In a normal foot the range of expansion is greater.

It is important to understand that an ill-fitting and deforming shoe is not always a direct source of pain. We often hear

individuals, who wear shoes too short and narrow, say that their foot-wear must be all right, because it gives rise to no pain. Some of these innocents hardly know what a real comfortable shoe feels like, having no recollection of the time when they last wore one. Fig. 39, represents outlines of feet and their coverings. The solid lines show those of the feet and the dotted ones those of their respective shoes. These are not exceptional but average illustrations, and fairly indicate the pressure to which many human feet are subjected day after day through a lifetime. The feet in time become so used to compression that they cease to be conscious of its presence.

The extent to which it is possible to painlessly compress a foot, is shown in Fig. 40. Here the solid lines show the real outlines of two adult feet and the dotted ones show outlines of the same feet while being manually compressed without pain. A child's foot will stand a relatively greater amount of painless compression than that indicated in the diagrams. Nevertheless, foot compression from any source, whether painful or painless, when long continued, results in irreparable damage.

Moderate weakness and discomfort is so very common, especially among women, that it may be considered almost the rule, and the opinion is quite prevalent that a certain amount of foot-suffering is normal and to be expected. Fortunately, not every foot abused by improper foot-wear becomes a source of great annoyance and extreme disability. It is usually only when injury or great or uninterrupted strain are added to the weakness, that the foot becomes so disabled as to be considered worthy of the attention of a physician. On this account one more often finds exaggerated cases of weak and flat-feet among bakers, laundresses, grocery clerks, factory workers, and others whose occupations compel them to be on their feet many hours each day. The reason why the severe and rigid form of flat-foot is less common among the leisure class, is that its members are not obliged to constantly use weakened feet, but are privileged to rest whenever they begin to tire or pain. It is, however, in this class one more frequently finds the affections directly due to compression, such as corns, bunions, hallux valgus and hammer-toe.

The wearing of improper foot-wear is as much due to ignorance as to vanity. If the laity understood that many

serious and crippling affections followed its use, it would, perhaps, lead to a much needed reform. The feet of adults are much less injured by compression than the more plastic ones of children, and it is during childhood that the foundation is laid for future disabling deformity. It is usually difficult to induce adults to dress in any way contrary to prevailing fashion ; but most parents are quite susceptible to instruction leading to the welfare of their children. It is especially in this direction that the physician can accomplish much good by judicious counsel.

[705 NORTH CHANNING AV.]

Malignant Disease of the Rectum.

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MR. PRESIDENT AND FELLOWS.—Malignant disease of the rectum is usually described under the good old name of "Cancer." And this name is peculiarly appropriate for the reason that the term cancer, as originally understood, conveys a more or less definite idea of carcinoma. While a few cases of sarcoma of the rectum have from time to time been recorded, it occurs so rarely in this situation that no further specific reference will be made to it.

Statistics show that some 3.5 per cent of all cases of cancer are located in the intestinal tract and that more than 80 per cent of these are found in the rectum. This would make the rectum the seat of the disease in approximately 3 per cent of all cases,—a rather large proportion for any one organ.

The type of the disease is determined by its site. When the anus is attacked, epithelioma ; when the movable rectum is invaded, adeno-carcinoma in some one of its several varieties. With reference to etiology, it is worthy of note that study of cancer of the rectum develops strong confirmatory

evidence of the idea so vigorously opposed by some that the disease is primarily a local one. When secondary deposits occur in the liver they are found to consist of columnar cells from the rectum and gland tissue identical in structure with the follicles of Lieberkühn normal to the bowel at the site of the original growth.

Whatever pathologists may ultimately prove to be the real cause of cancer, local irritation will doubtless continue to be accepted as the most potent factor in determining the site of its development. Considering the function of the rectum and its anatomic structure it is easy to understand the relatively large proportion of cases encountered here.

The symptoms of cancer of the rectum are in no sense distinctive. At first there is merely a sensation of fulness and weight in the pelvis, local irritation, inflammation and ulceration following in the order named and giving rise to their characteristic symptoms. Tenesmus and more or less profuse pathologic discharge become the most prominent symptoms as soon as ulceration takes place. There is nothing of diagnostic value, from a clinical standpoint, about the discharges, unless an unusual proportion of blood be so considered. However, intelligent use of the microscope is capable of rendering great aid in this connection. The amount of pain incident to a rectal cancer depends largely upon the location of the disease. If in the anal canal the pain is generally very severe, if in the movable rectum, real pain may be entirely absent. Certain authorities have described a kind of pain peculiar to malignant disease and diagnostic of it independent of its site. But in the experience of the writer no such instance has been encountered.

Obstruction to the passage of feces is less marked in cancer than in benign stricture, due to the tendency of the former to break down easily, thus keeping the lumen open. Total obstruction is comparatively rarely encountered for the same reason, metastatic invasion of other organs and exhaustion usually resulting in death before the local growth reaches such proportions.

The so-called cancerous cachexia is a late development and not entitled to any great weight in the matter of diagnosis. Indeed, all diseases of the rectum marked by ulceration and irritating discharges quickly result in producing the appearance so denominated, by reason of the associate tenes-

mus, loss of blood, broken rest, intestinal disturbance, malnutrition, etc.

In the diagnosis of cancer of the rectum uncertainty is never excusable. The symptoms should always be carefully elicited and duly weighed, but, however characteristic they may be, our full duty is never done until a thorough physical exploration has been made. Fortunately modern methods of examination leave no room for doubt as to the nature and extent of any disease located within the distal eighteen inches of the anus.

In this connection I may properly enter a plea for more systematic examination of all cases of rectal disease without reference to history and symptoms. The profession can not longer afford to rest under the imputation of criminal negligence in this respect. The onset of cancer is always insidious and in its early stages the symptoms do not differ from those of the ever popular "piles" and other diseases of this organ. The pity of it is that neglect in the early stages too often means hopeless impotence in the later stages,—the possibility of successful treatment decreases with terrible rapidity as the disease advances. If physicians would only insist on seeing what can be seen and feeling what can be felt in every case that consults them, the result would be a saving of many valuable lives. For I would again emphasize that with respect to rectal disease no man, though he possess the divination of a god, can make other than a conjectural diagnosis from the subjective symptoms. Personally, my own invariable rule, and I believe it is the only proper one, is to decline to treat any case in which I am not permitted to make a local examination. Such a rule may occasionally be charged with the sacrifice of a fee, but in the long run it will certainly prove conducive to self-respect.

When the disease has been located its nature may be determined by the history of the case, age of patient, physical characteristics of the growth, lymphatic involvement, metastasis, and the employment of the microscope when any doubt remains.

Now, what and how much in the way of relief can be promised the victims of rectal cancer? Very little at best. From palliative measures, whether medicinal or operative, we can hope for nothing more than to promote the comfort and, to some extent perhaps, prolong the life of the sufferer.

Radical measures likewise hold out little promise under the conditions ordinarily presented by these cases. That the latter statement is true is the most deplorable fact connected with the subject. It is reasonable to believe,—indeed, clinical experience has abundantly demonstrated,—that in the early stages of the disease surgery is not more powerless here than in cancer of other organs. But the sad truth must again be noted that these cases are rarely seen until lymphatic involvement, metastasis, and general exhaustion have rendered them practically hopeless.

In determining the treatment indicated in any given case the first question to be considered is, Can the entire disease be removed? When this question is answered in the affirmative it will not often be found that the condition of the patient's general health will forbid the operation, nor will it often be declined when the nature of the disease is explained to the victim and his friends. But because, and only because, the question must be answered in the negative in such a large proportion of cases, palliative treatment demands consideration. This may be briefly disposed of. The first indication is to keep the parts as clean as possible by the use of enemas to which may be added a little carbolic acid and, if the suffering is great, a small quantity of tincture of opium. The bowels should be kept in soluble condition by the judicious administration of laxatives and regulation of the diet. The use of opium and its derivatives should never be begun in these cases except with a full knowledge of the probable result. For my own part, in hopeless cases where the tenesmus and pain are great, I do not hesitate to give it as often and in as large quantities as may be necessary to keep the patient comfortable. That the opium habit results is a matter of small moment, for the life history of these cases rarely exceeds three years and the fatal termination is not appreciably hastened by the drug. And even if it were, the relief which can be given in no other way counts for more than an additional month or year of a miserable existence.

Any operative procedure which does not contemplate the removal of the entire growth, properly considered is merely a palliative measure and should be so classed. Of these proctotomy and attacking the growth with curette or sharp spoon occasionally serve a useful purpose when obstruction is threatened. But the tendency of malignant growths to take on

renewed and increased activity when subjected to traumatism, surgical or otherwise, must be constantly borne in mind in deciding upon such measures.

In selected cases colostomy possesses decided advantages over every other method of treatment. Of course, being strictly speaking a purely palliative procedure, this statement is predicated on the distinct hypothesis that the growth will not permit of total extirpation. The advantages of the operation are obvious. Not only are the dangers of obstruction eliminated, but the diseased rectum is saved from the constantly recurring irritation due to the fecal discharges, and made accessible to cleansing and soothing applications from above as well as from below. Clinically it is daily being demonstrated that these patients gain rapidly in flesh and strength after the operation and that life is both prolonged and rendered far more comfortable by it. The objection sometimes urged that the patient becomes an object of disgust after colotomy is based either upon faulty knowledge or false sentiment and is not entitled to serious consideration.

The technique of colotomy can not here be discussed. It must suffice to say that in the majority of cases the inguinal route is preferable and that to obtain the greatest benefit from the operation it should be performed early,—before the patient's strength has been lost beyond the rallying point.

The only truly radical treatment of malignant disease of the rectum is extirpation of the entire growth without reference to extent or the importance of the parts affected. When this can not be accomplished it is far better not to perpetrate a useless and dangerous mutilation upon the patient. Excision of the rectum, particularly the upper portion, is one of the most difficult and dangerous operations in surgery,—difficult for anatomic reasons, dangerous chiefly for the reason that it is too often undertaken without regard to the definite indications in the case. That statistics show an operative mortality of about 40 per cent and a large proportion of recurrences, are due for the most part to the latter consideration. Resorted to sufficiently early and applied sufficiently boldly, there is no reason to believe that surgery would be less effective here than in malignant disease of other parts.

The proper limits of this paper forbid a detailed consideration of the several methods of operating. Broadly speak-

ing it may be said that when the disease is confined to the distal four or five inches it may be successfully attacked by the perineal route; when above this height the sacral route is preferable, or the two methods may sometimes be utilized to advantage in the same case. By whatever route the local growth is to be attacked, a preliminary colotomy is often indicated and will be found to serve a most useful purpose.

In concluding this hurried presentation of an exceedingly important subject it may again be emphasized that early diagnosis is the predominant consideration in malignant disease of the rectum. We are not in position to save life until we know when it is imperiled.

[161 NORTH CHERRY STREET.]

The Public Control of Tuberculosis.

By LAWRENCE F. FLICK, M.D.,

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A PUBLIC danger demands a public remedy. This is a maxim of law which holds under every form of government. So long as tuberculosis was looked upon as a visitation of Providence or a legacy from a degenerate ancestry, governments had no concern with it because they can not interfere with the doings of Providence nor the private rights of man. Once it came to be established, however, that tuberculosis is a contagious disease, and consequently a preventable one, governments became responsible for its prevention. This responsibility is predicated upon the contagiousness of the disease.

In order that the public may be aroused to its responsibility in the prevention of tuberculosis, the contagiousness of the disease constantly should be kept to the forefront. There must be no obscuration of the truth nor softening down of terms which express the fact. Tuberculosis is contagious and it should be called so on all occasions. The word infectious is not applicable and the word communicable is misleading; neither should be applied to tuberculosis.

Recently, in addressing the different branches of the gov-

ernment of a State in behalf of a State Sanatorium for consumptives, the mischievous effect of the use of the term communicable by medical men was made manifest. A discussion just had taken place in a medical society, in which preference was given to the word communicable, and resolutions had been adopted by the society opposing the position of Surgeon-General Wyman in declaring tuberculosis contagious. My argument for an appropriation on the score of prevention was promptly met by the statement, that my premise was wrong, as the disease had just been declared non-contagious by a large body of medical men. Thus it became necessary to again prove what has long since been demonstrated and what now should be common belief of all. The logic of laymen is often very keen. If tuberculosis is not contagious it is not preventable; and if it is not preventable, there can be no reason why governments should interfere. This is what may be called a short-cut conclusion, but it is good logic. A communicable disease practically may not be a preventable disease, and the word communicable does not carry with it the idea of public danger. In order that governments may interfere for the prevention of disease there must be something which the government can do. In a contagious disease the government can prevent or regulate contact, and the duty of the government becomes quite obvious, because the individual can not prevent or regulate contact himself. The word contagious moreover carries with it the idea of public danger and suggests the remedy—public prevention.

Can the word contagious properly be applied to tuberculosis? It can, and in truth it is the only word which scientifically fits the case. Tuberculosis is essentially a contact disease. For implantation of the tubercle bacillus in a new host prolonged intimate exposure is necessary. This exposure, moreover, must be to a tuberculous subject or to a place or thing which has been contaminated by a tuberculous subject. Momentary exposure is not sufficient, and even repeated casual exposure does not amount to much. In practice new implantations most frequently take place through family, employment, and business relationships, and through occupation of houses which have been occupied by consumptives.

For the public control of tuberculosis it is necessary for governments through Boards of Health:

1. To establish registration of tuberculosis.

2. To distribute literature on the prevention of tuberculosis.
3. To establish sanatoria and hospitals for the treatment of tuberculous subjects.
4. To disinfect houses and places which have been contaminated by tuberculous subjects.
5. To sterilize clothing, implements and belongings of tuberculous subjects, before they can pass into the hands of others.

Without registration of tuberculosis it is impossible to control the spread of the disease. The government must first know where a case is before it can deal with it. There has been a great deal of opposition to registration by members of the medical profession, due, no doubt, to a misconception of what it means and of what is to follow its wake. The unnecessary hardships which often go with the registration of other diseases have raised a prejudice and antagonism against the registration of tuberculosis in the minds of medical men which is a credit to their hearts if not to their heads. This prejudice and antagonism is unfounded in fact, however. There can be no hardship in the registration of tuberculosis or in what follows it, unless it be wilfully and maliciously introduced. Tuberculosis differs so from other diseases in its mode of contagion, that it requires measures of prevention peculiar to itself; and these measures are all in line with humanity and benevolence. Compulsory isolation of the consumptive is out of the question and is unnecessary. The consumptive poor are only too glad to go to a sanatorium or hospital where they can be made absolutely harmless, and the consumptive middle-class and the well-to-do can, in nearly all cases, be taught to make themselves harmless. Even these latter are glad to go to sanatoria if the opportunity be given them. Compulsory disinfection of houses which have been occupied by consumptives and the sterilization of clothing, furniture and implements which have been used by them throw a protection around the poor and weak against the avarice of the rich and strong. The registration of one's name as a person suffering from tuberculosis can be no more objectionable before death than after it, especially as in either case the registration is a secret one. In a proper scheme for the prevention of tuberculosis registration before death would have the compensation of bringing protection to those who are near and dear, and who would not

sacrifice a little sentiment to save his loved ones from so horrible a disease as tuberculosis?

Boards of Health should systematically distribute literature to all persons having tuberculosis, telling them how to avoid giving the disease to others; and to all persons exposed to tuberculosis, telling them how to avoid contracting the disease. With the very poor they should even go further and send a representative to the tubercular subject to teach him how to avoid giving the disease to others, and to supply him with the means necessary to do so. It has been urged as an argument against registration of tuberculosis that the family physician can give all the instruction to the tuberculous subject which is necessary for successful prevention of the disease. Theoretically, this is true but practically it is not true. Judging from my experience with tuberculous subjects I would infer that in family practice the physician never instructs his tuberculous patient how to avoid giving the disease to others nor troubles himself much about whether preventive measures are practiced or not. Sometimes the general advise is given to be careful about the spit, but such advise is often worse than useless as it leads the patient to do the very things which he should not do, namely spit into handkerchiefs, or old rags or possibly into the fire or coal scuttle. In order that a tuberculous patient may make himself harmless he must place his sputum where it can be sterilized and he must not contaminate his hands, his lips or anything about him whilst doing so. How to do this must be made very clear to him in all its details or he will not do it; and the importance of doing it must be brought home to him very forcibly or he will not continue to do it even though he begins it. Instructions and information upon this subject, when they come from the Board of Health, will carry much more weight with the average layman than when they come from the family physician.

The establishment of sanatoria for the treatment of early stage cases of tuberculosis and of hospitals for the treatment of advanced cases is the most humane and at the same time the most efficient measure which governments can inaugurate for the control of tuberculosis. Tuberculous subjects are most anxious to go to such institutions, because they believe that by so doing their chances of recovery are improved and, in part, also because from fear of the disease there is more or less pressure brought to bear upon them to leave home. Among

the poor, moreover, it is now generally recognized that a sick person is more comfortable in a hospital than in his home. The money which is necessary for the maintenance of such institutions quite properly should come from the public treasury. The good to be accomplished is not so much for the individual as for the people at large. In this regard the tuberculous subject is much in the same position as the insane person. To take care of persons afflicted with such diseases is a duty and not a charity, and governments must not seek to evade the duty because its performance at the same time extends a charity.

The disinfection of houses and places which have been contaminated by tuberculous subjects is so clearly a government function that the duty of the government in the matter follows as a corollary upon the establishment of the contagiousness of tuberculosis. This being so it is surprising how little has been done by Boards of Health in this regard up to the present time. The contamination of houses and places by tuberculous subjects has been clearly demonstrated by a number of investigators more than ten years ago, and yet up to the present time but few Boards of Health have inaugurated an efficient system of disinfection of premises which have been occupied by consumptives. For this disinfection of such premises absolute cleansing is necessary. The tubercle bacillus as given off by a tuberculous subject is cachéd in broken down tissue, and when this tissue has dried, is protected against gaseous germicides. To rid a room which has been occupied by an uncleanly tuberculous subject of tubercle bacilli it is therefore necessary to remove every particle of tuberculous matter or to sterilize such matter through and through. In practice this can best be accomplished by scraping and scrubbing the walls and scrubbing all the wood work. Proper sterilization of premises which have been occupied by tuberculous subjects before new occupants take possession of them would undoubtedly materially lessen the number of new implantations of the disease.

Sterilization of clothing, implements and belongings of tuberculous subjects before they can pass into the hands of others should be practiced systematically and exactingly by boards of health in every community. I repeatedly have been able to trace new implantations of tuberculosis to the use of objects which for a long time had been used by tuberculous

subjects. As illustrations I may mention a woman who contracted tuberculosis by wearing a fur coat which had been left to her by a consumptive; a child who contracted the disease by using a cup which had been used by a consumptive; a letter-carrier who contracted it by taking the route of a consumptive letter-carrier as substitute and carrying his bag; a machinist by being promoted to a consumptive machinist's lathe, and a musician by using a consumptive's flute. Charity and economy frequently prompt people to give away the belongings of deceased people to some poor relative or friend. The belongings of consumptives unless thoroughly sterilized are indeed Greek gifts, and it is terrible to contemplate the far reaching sorrow and misery which such gifts may hide under the cloak of beneficence. It is surely the duty of the government to protect people against such dangers.

In support of public control of tuberculosis as a proposition standing by itself it would be superfluous to make an argument at the present day. If tuberculosis is contagious it is the duty of every civilized government to control it.

That tuberculosis is contagious will scarcely be called into question by any one who has even the most elementary knowledge on the subject.

[736 PINE STREET.]

The State's Duty in the Matter of Prevention of Consumption.

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KANSAS CITY, MO.

CONSUMPTION is a contagious and communicable disease due to a specific germ, the tubercle bacillus. A contagious disease is one in which the disease germ goes from one host to another without passing through an intermediary host or culture medium, in other words, a disease in which the pathogenic organism usually does not reproduce itself outside the host upon which it maintains its parasitic existence. The parasite in such a disease is always conveyed from one host to another, either by direct contact or by indirect contact through the fomites of the disease. An infectious

disease on the other hand is one in which the parasite reproduces itself in an intermediary culture medium; for example, malaria. Tested by the diseases which are types of infection and contagion consumption is purely a contagious disease, as it has no intermediary host; when the bacillus from a consumptive is thrown off it may and does maintain its viability a long time in the necrosed tissue by which it is surrounded. But its cycle of life is suspended and is only resumed when it comes in contact with a new and congenial soil. The necrosed tissue by which the germ is surrounded plays a very important part in its transmission from one host to another, it dries up and becomes dust, in which the bacilli are directly carried to new soil there to recommence their suspended cycle. What other factors may enter into the causation of consumption, such an over-work, grief, poverty, exposure, etc. (heredity plays no part directly in the causation of consumption) the fact remains that there is but one essential factor and that is the germ. A disease is contagious or not contagious, it can't be both. If it is due to an organic life or germ, it must be contagious or infectious. Admitting that the germ is the one essential factor in the causation of consumption, at the same time not denying that there is in this as in all other diseases predisposing factors or causes, we are forced to admit that without contact with this one essential cause we can have no new case of the disease. What is now self-evident is this, that if we could surround and isolate every case of consumption, so that none of the germs given off from these cases could come in contact with a new soil, we would stamp the disease from the face of the earth. As this is an impossibility, how we may nearest approach the desired end? First, by the registration and reporting of every known case of consumption, as soon as diagnosed. To accomplish this, the State must pass a law such as the State Board of Health of New York has suggested, in which I have made a few changes as follows:

1. Local health officers will hereafter register the name, address, sex and age of every person suffering from tuberculosis within their respective jurisdictions, so far as such information can be obtained. This department requires that hereafter all physicians will forward such information to the health officials in their respective jurisdictions in which such cases occurs. The information will be solely for the use of

health officers, and in no case will visits be made to such persons by public officials, nor will any public sanitary surveillance of such patients be assumed, unless the patient resides in a tenement-house, boarding-house or hotel, or unless the attending physician requests that an inspection be made of the premises, and in no case where the person resides in a tenement-house, boarding-house or hotel, if the physician requests that no visits be made by inspectors, and is willing himself to deliver circular of information or furnish such equivalent information as is required to prevent the extension of the disease to others.

2. When a local health officer obtains knowledge of the existence of cases of pulmonary tuberculosis residing in tenement-houses, boarding-houses or hotels, unless the case has been reported by a physician, and the latter requests that no visits be made, inspectors, will visit the premises and family, will leave circulars of information and instruct the person suffering from consumption and the family concerning the measures which should be taken to guard against the spread of the disease; and, if it be considered necessary, will make such recommendations for the cleaning or renovation of the apartment as may be required to render it free from contagion.

3. In all cases where it comes to the knowledge of a local health officer that premises which have been occupied by consumptives have been vacated by death or removal, an inspector will visit the premises and direct the removal of infected articles, such as carpets, rugs, bedding, etc., for disinfection, and will make such written recommendations to his immediate superior, concerning the cleaning and renovation of the apartment as may be required. An order embodying these recommendations will then be issued to the owner of the premises and compliance with this order will be enforced for sanitary reasons. No other persons than those there residing at the time will be allowed to occupy such apartments until the order of the health officer has been complied with.

4. The authorities of all public institutions under the jurisdictions of the State department of health, such as hospitals, dispensaries, asylums, prisons, homes, etc., shall be required to furnish to the Department of Health of the State of Missouri the names and last addresses of every consumptive coming under observation, within seven days of such time. And all cases that remain in above institutions must be kept

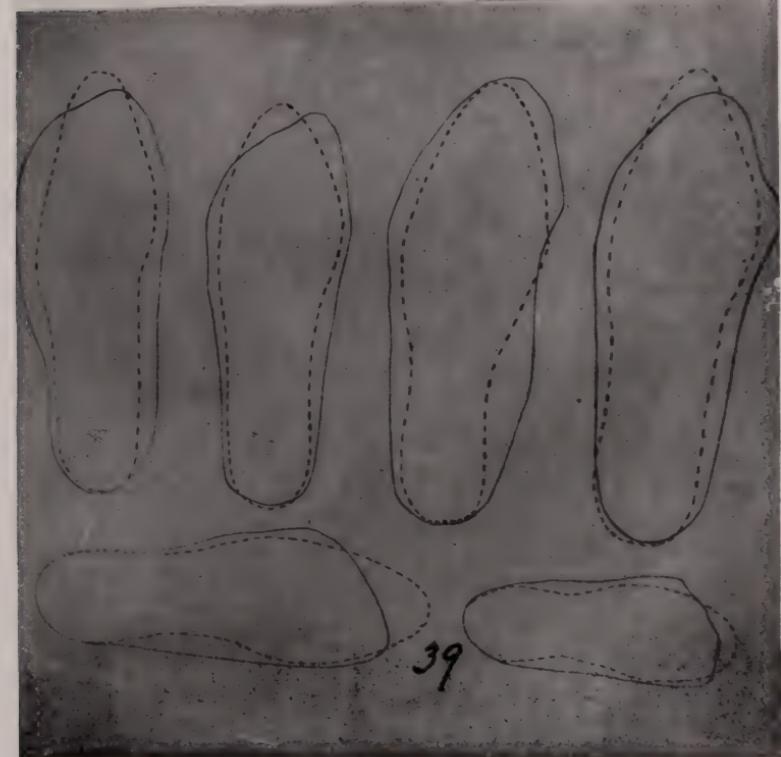
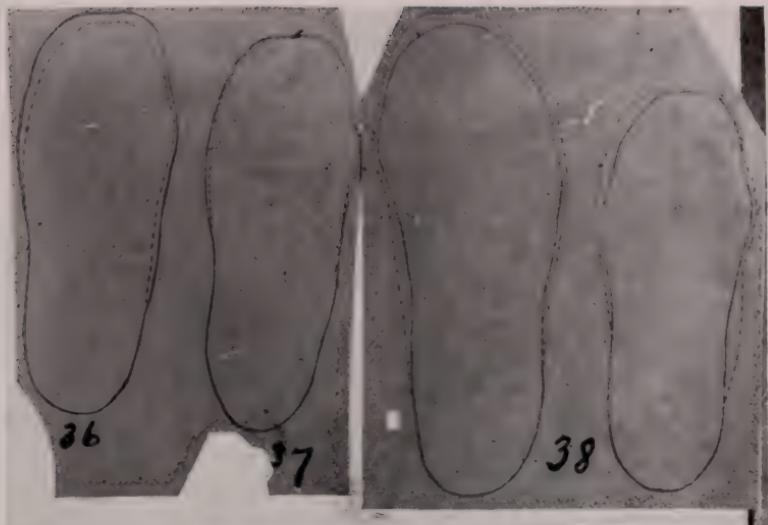


Fig. 36. Compression of foot by new stocking.

Fig. 37. Compression of same foot by same stocking worn and washed a number of times. Solid lines show outlines of naked feet; dotted lines show outlines over stocking.

Fig. 38. Range of expansion of average adult feet. Solid lines show outlines of feet in repose; dotted ones, outlines of feet bearing body weight.

Fig. 39. Outlines of average feet and foot-wear. Solid lines show outlines of feet; dotted ones, outlines of shoes worn on these feet.

in wards or rooms by themselves, and those uncured leaving the institutions must give home address, and State Board of Health be notified of the same.

The State should be sponsor and distributor for literature teaching the public the following: The public must be taught that consumption is contagious—in what way and to what extent. Consumption is not a contagion as compared to other diseases, which are rapidly so; but it is slow but none the less sure; and comparing smallpox and consumption, we can say where it takes but moments to contract the one, it takes weeks, months, and even years to acquire the other; and while it takes but days for smallpox to run its course it takes months and years for consumption; and comparing their duration one is nearly as intensely contagious as the other. They must be impressed with the fact that the danger lies in the necrosed tissue, that is spat from the lung of their fellows, and that the tissue is divided and sub-divided until it becomes dust, many particles of this dust containing germs, and until this is devitalized there is danger. Also they must be taught that 50 per cent of all new cases of consumption are caused by family relationship implantations, 25 per cent to house contamination, 15 per cent to clothing and utensils contamination, and only 10 per cent to other causes such as occasional contact or breathing sputum dust of the street public conveyances, etc. We must also advise them how to avoid these different sources of contagion. To do this all consumptives must know the name and nature of the disease. A number of people both lay and professional will say, that it is unnecessary and even cruel to pronounce one suffering from an incurable disease. It has been my experience that by far the best course to pursue is to inform the patient of the nature of his disease. It may at first be a shock and a source of mental suffering and anxiety, but the ultimate effect will be for the patients best good. The patient will observe the rules laid down for his own recovery, and the precautions necessary to prevent the reinfection of himself and the infection of others. Knowing his disease, you can induce him to adopt the radical changes in his mode of living, which will tend to his own recovery. But granting that it does cause the patient some mental anxiety and suffering, can it be maintained that this is better than bringing suffering, disease and death to many others, and the reinfection of himself without a chance of his recovery. All the possible harm

it can do the individual, if he is in the incurable stage is to render the few remaining months of his life a little less comfortable. After making it plain to the public that the germ is the cause of the disease, and that this germ must and does come from the sick to the well one, and this germ does not stop on the way to rear its family, but in the language of the day, it lays dead until wafted by some favorable circumstance to its new home, there it raises its family and sends them forth to populate the earth with the one sure cause of the great white plague. We must inform them of the ways by which they may avoid this parasite (family relationship) :

1. By the absolute destruction or devitalization of all matter given off from the lungs of the sick one. This can be best accomplished by antiseptics and fire.
2. A high degree of personal cleanliness of the patient himself.
3. A sleeping room occupied only by the patient into which sunshine and air can enter freely.

House contamination is easily controlled, and must be carried out by a conscientious physician or a responsible health officer. Absolute cleanliness is the only safeguard, and houses in which consumptives have lived must be disinfected until the germs are all destroyed. This cause of contagion can by proper disinfection be entirely eliminated in the next few years, food, clothing, and utensils contamination must be trusted to our patient, guided by his physician. The contagion from sputum dust contact, etc. can be nearly if not quite done away with by having rules in all places where consumptives are employed, requiring them to properly care for and destroy their sputa. Ordinances have been passed in many cities of this State forbidding spitting in public places, which in my opinion can not and are not enforced, for very few Americans can be made to swallow their own sputum. The harm from tuberculous spit in public places comes from depositing it in dark and out of the way places where it is not devitalized, and becomes germ-spreading dust. The State, in the larger cities where the harm is done, should compel these municipalities to provide spittoons on their streets flushed with running water where the spitters can be compelled to deposite their excreta as they are compelled to deposit other body excretions. Is there any valid reason why the State can not pass this law compelling the reporting and registration of all consumptive

cases at the same time giving to all of these cases information which will prevent infection of others and reinfection of themselves. I say there is none, and in my opinion, if this is properly done the number of cases of pulmonary tuberculosis in the State of Missouri will decrease one-half in the next ten years.

Some of the gentlemen will maintain that this law can not be enforced, for the reasons that all cases will not be reported, and that the laity can not be educated to fear the contagion of consumption. Granting that these reasons will have a bearing, can this great State be excused from passing and enforcing a law which will decrease by one-half the ravage of a plague, which causes one-tenth of our deaths, and one-fourth the suffering? Would it not be a great accomplishment and something for our law-makers and physicians to be proud of, if at the end of ten years they could say we have reduced the death rate from this disease 50 per cent? This is going to be done in other States, and soon. Why not in Missouri? The ideal law which should be passed in our State is one which would require the isolation in properly conducted hospitals and sanitariums of every known case of consumption, and it will not be at all necessary to place above the door the legend, "All ye who enter here leave hope behind." But, as this would be an impossible law to enact at present, what may we substitute? It would be a law to appropriate moneys to build and maintain hospitals and sanitariums for our consumptive poor. In my opinion if there is anything that this State needs to place it on a par or in advance of all others it is these hospitals and sanitariums.

1. For the amelioration of suffering, which it will bring its inhabitants. It can be approximately proven that from 25 per cent to 33 per cent of the suffering amongst the poor, and semi-poor of this State can be traced directly or indirectly to pulmonary tuberculosis. Can anyone venture to say how much hardship is undergone? How many sacrifices are made daily for the benefit of near and dear ones by our poor people?

2. To prevent the spread of the disease itself, for a very, very large per cent of all new cases, especially in our large cities, can be directly traced to tenement-house and other abodes of our indigent class.

3. For the benefit of the consumptives themselves. Can anyone deny that one suffering from consumption would not

be immeasurably better off in a properly conducted tuberculous hospital or sanitarium where they have more than an even chance of getting well? Much better than they have in their own homes, where they are daily reinfecting themselves, and endangering the lives of all of their companions, and also the general public, and we are now at the great reason for the isolation of consumptives in proper hospitals and sanitaria. There should not be a chance for the contamination of a single individual outside of these hospitals, and it is a rare thing that a new case develops in these hospitals, proving that the contagion is, and can be controlled absolutely by the proper de-vitalization of the excreta of this disease. Is there a single reason, moral or financial, why these laws should not be passed, levying taxes and appropriating moneys for the building and maintenance of these institutions, if there is none, there must be many for. Taking it for granted that this society agrees with me, that it is the duty of the State to pass laws requiring the registration and reporting of consumptive cases, and to build hospitals and sanitaria for the care of our poor and semi-poor inhabitants, then we have remaining the duty of the medical profession, which is to see that our legislators know their duty and do it, which will in itself be a glorious achievement.

[317 RIALTO BUILDING.]

Borax and Boric Acid as Food Preservatives. — It seems that it is not generally known that borax is extensively used as a food preservative; in fact, it has been asserted that the exportation of meat would be almost impossible without this drug. Dr. Victor Vaughan has given this substance a thorough experimental study, and concludes as follows:

The use of borax and boracic acid as preservatives in butter or cream is justified by both practical results and scientific experiments. The dusting of the surfaces of hams and bacon, which are to be transported long distances, with borax or boric acid, not exceeding 1.5 per cent of the weight of the meat, is effective, and not objectionable from a sanitary standpoint. Meat thus dusted does not become slimy, because the preservative prevents the growth of aerobic peptozizing micro-organisms.

LEADING ARTICLES.

INVISIBLE MICRO-ORGANISMS.

By CARL FISCH, M.D., St. Louis.

The remarkable conclusion resulting from the experiments of Reed and Carroll (*American Medicine*, February 22, 1902) that the organism causing yellow fever passes through the pores of a Berkefeld filter and is too small to be seen even with the help of our most perfect lenses, has again called the attention to the limits with which physical laws surround us in our attempts at penetrating into the mysteries of life. It will be remembered that the authors mentioned took the serum of a yellow fever patient in the first stage of the disease, filtered it through a Berkefeld filter and injected it in small quantities into healthy individuals. The latter had been under close observation for a considerable period to exclude the possibility of extraneous infection. In due time they developed typical cases of the disease, as did those subjects that were injected with the unfiltered blood and serum. With the serum of the individuals that developed yellow fever from the injection of the filtered serum of a yellow fever patient, a third subject was injected, that in turn, too, showed in two days a typical attack.

Reed and Carroll followed in their method the classic instance of Nocard, who, some years ago, investigated the contagious peri-pneumonia of cattle and found that he could pass the body fluids of a sick animal through a Chamberland bougie, and with the filtrate infect fresh animals. This procedure could be successfully performed in an endless series of animals.

Following Nocard's footsteps a few years later, Loeffler and Frosch established similar qualities for the etiologic agent of the foot and mouth disease; here, in the same way, the microbes pass through the filter. Likewise, it has been shown that the horse-pest of South Africa, the bird-pest of Switzerland and Northern Italy, as well a very interesting disease of the tobacco plant (*Mosaikkrankheit*—Beyerink)

are caused by an agent that easily goes through the pores of porcelain or Kieselgulr bougies.

The first question as to the agents causing these different diseases concerns its nature. Microscopically, even with the highest powers, nothing can be discovered in the filtrates (with one exception), cultures remain on all possible media negative (one exception) and the presence of the agent can only be demonstrated biologically by injection into susceptible plants, animals or human beings.

The fluids become harmless through heating to a certain temperature, the same as through addition of antiseptic substances. The first supposition was that we had to deal with exceedingly powerful toxins; however, the experiments of Nocard and Loeffler soon demonstrated that this idea could not be entertained on account of the enormous dilution that this toxin would undergo during the successive transferences from one animal to the other. In the series of these investigators the fatal dose was always the same and did not increase as the series advanced, as must be necessarily the case, if the agent would be a substance like, for instance, bacterial toxins. The fact that the virulence remained unaltered proved clearly that the agent multiplied in the infected animal, like other pathogenic micro-organisms. This has lately been established in the same way for the bird-pest by Centanni, and Lode and Grauber, and, to a degree, it was demonstrated in the above-mentioned experiments of Reed and Carroll on yellow fever.

The only explanation that is left, is that in the filtrate there are present micro-organisms too small to be seen with our best optic appliances. The assumption of a contagium vivum fluidum, that Beyerinth introduced for the agent of the tobacco disease can not be reconciled with our biologic knowledge. In this respect the work of Nocard on the microbe of the peri-pneumonia of cattle is of exceeding interest. As far as we know this is the only microbe that is so small as to pass the bougie, but which, nevertheless, with the highest powers can be seen in the form of swiftly moving exceedingly small granules, the shape, size and character of which it is, of course, impossible to make out. In this case, too, the organism can be cultivated in bouillon and other media; the bouillon shows a distinct turbidity and from it other virulent cultures can be made. This is not the case with any of the other diseases mentioned, their microbes

must be still smaller. Since we do not know of any protozoa that go down to this exceeding minuteness, but know of bacteria, which stand at the limit of visibility, since, furthermore, bacteria certainly are as to their phylogeny lower organisms than protozoa, we are inclined to consider the invisible organisms as bacteria or as nearly related to them.

Shall we ever be able to see these minute organisms? The influenza bacillus has the following dimensions: $0.2-0.3 : 0.5 \mu$. Abbé has shown that even if the aperture of oil immersion lenses could be made 180° , the smallest differentiable object could only be of the size of 0.55μ (central illumination) or 0.27μ (oblique light), and only by photography (violet or ultraviolet light) we could make objects visible somewhat smaller than 0.21μ . Our chances in this direction are very slight.

While thus the near future is not likely to further our knowledge of the morphology and systematic position of these microbes much, their biologic study will certainly bring forward important increase of our information. Already these studies have, in a certain direction, furnished a hint that is not without importance.

Of a number of other diseases, which from their character we must designate as infectious, the causative agent has so far not been discovered. To these belong, for instance, hydrophobia, variola, cattle-pest, etc. Of these, we know that fluids, *per se* infectious, will become harmless by filtering through a bougie; the microbes, therefore, are retained within the pores of the filter, that means they must be larger than the ones which pass through. Nocard has shown that the organism of the cattle peri-pneumonia goes through the filter, but at the same time it is just at the boundary of visibility—it can be seen. Influenza bacilli do not go through the filter. We must, therefore, conclude that the organisms of rabies, variola, etc., are larger than those of peripneumonia of cattle and that it must be possible to see them microscopically.

THE DIAGNOSIS OF FETAL HYDROCEPHALUS IN BREECH PRESENTATIONS.

By A. S. BLEYER, M.D., St. Louis.

This subject has received so very little attention that Dr. Belisaire Narich has made a résumé of the scattered data of evidence on the subject that have appeared in literature since the time of Baudelocque and Moreau. This is, perhaps, the first scientific classification of the diagnostic points on this important condition.

It is, of course, simple enough to diagnosticate fetal hydrocephalus in a cephalic presentation, in which the gapping, fluctuating interval between the parietal bones can be felt and the fontanelles reached, together with that sign described by Baudelocque, the thin, paper like free edges of the bones, and their approximation and divulsion, coincident with the uterine contractions.

But it is in the cases of breech presentation that the greatest difficulty is encountered in determining hydrocephalus. It is the exception to make this out at all until the delivery of the trunk.

Some of the following signs of the condition have been handed down to us by the older writers and others are the work of recent students in obstetrics.

1. Hydramnion.—This is the rule when a uterus contains a hydrocephalic fetus; this may be so excessive as to render abdominal palpation of almost no avail.

2. Previous delivery of hydrocephalic fetus. A case is reported of five consecutive deliveries of hydrocephalic fetuses in one woman. The same woman gave birth to two other babies with sutures and fontanelles normal at birth, but who became hydrocephalic during the ensuing years.

3. Ribemont-Dessaiques recommends cephalic version in suspected cases for the purpose of facilitating diagnosis by vaginal examination of the head. The other evidences can only be found during delivery, after extrusion of the trunk.

4. The size of the arrested head is ascertained by abdominal palpation; this is usually an easily distinguishable sign, and is of the greatest value. The explanation as to why an enlargement of the head, appreciably beyond the normal, is ascertainable at this stage,

and not ascertainable when the head is in one of the hypochondriac regions, is that low down in the hypogastrum, we find the greatest deficiency of the adipose layers and, also, that at this time we have the uterus closely applied about the head (the waters having been evacuated); while with the head in the hypochondrium, we must palpate through abdominal walls of greater thickness, through a uterus greatly distended with fluid, and we are hindered from reaching the head at all, because of the placenta mass, which, as is known, is usually attached in this locality. Surely enough, when, after delivery of the trunk we palpate the arrested head through the lower abdomen, the placenta is still in the uterus and is as great a hindrance to the proper feel of the head as earlier in our examination, with the head high up. But with the body out and the uterus firmly contracted, the placenta becomes so firmly matted about the head as to form with it, one mass. This, by its great bulk, is recognizable as pathologic, since we must in such a case, assume for the moment, that the placenta is of usual dimensions.

5. Arrest of head, with arms delivered.—Normal pelvic measurement and no other ascertainable cause of obstruction.

6. Shriveled or misshapened body. This sign is disputed by the more recent writers, although it was firmly adhered to by our predecessors. In fact, it has been stated that the body of a hydrocephalic fetus is usually in a state of excellent nourishment; from which fact, has been drawn the significant conclusion, that hydrocephalus does not seem in any way to hinder the development of the rest of the body. However, many cases are on record in which, during violent efforts of traction on the body, to deliver the after-coming head, the neck has been torn asunder and the head left by itself in the uterus. This would, of course, point to the fact that in these cases there was a decided lowering of the integrity and solidity of the tissues.

7. Detection of separation of frontal bones by the index finger, guided by root of the nose. Bonnaire has twice diagnosed hydrocephalus at this same stage by digital palpation of the posterior fontanelle. This, however, is not the rule.

8. Hand passed entirely into the uterus to reach the fontanelles and fluctuating space at the saggital suture. This is a method of necessity rather than election, though, with careful asepsis, such a procedure is warranted.

9. Chantrenil mentions the height of the shoulders in the vagina, when arrest is due to a very large head.—Translated from *Le Progrès Médical*.

THE FUNCTION OF THE THYMUS GLAND.

Gradually our knowledge concerning the function of the ductless glands is assuming a comparatively satisfactory state. The thyroid gland is known to possess a specific function, the abolition of which seriously interferes with the metabolic processes of the organism. The internal secretion of the suprarenal capsules also has a high importance in the activity of the body.

But the actual purpose of the thymus gland is still problematical. From a study of its development, its structure and its chemical composition various theories have been offered, but none have received sufficient corroboration to make them more than interesting speculations. The number of chemical ingredients which it contains have suggested that it must have an important function in the preparation and maintenance of the blood. Watney discovered many granules and masses of hemoglobin in this organ and suggested that it was the source of the red blood-corpuscles; but its degeneration soon after birth suggests that its function is connected with fetal development.

Injections of different kinds of extracts of this organ into animals have been without appreciable effect, and the opinion has been passed that no internal secretion is elaborated.

The presence of a large amount of lymphoid tissue has suggested that the gland is a source of the leukocytes, and this theory is the one usually accepted. Beard has recently thrown light on this obscure subject by embryological studies. He demonstrated that the appearance of the leukocytes is synchronous with the first traces of the thymus in the embryos of the skate (*Raja batis*), and this fact goes far to prove that they have their origin in this organ. The white blood-corpuscles are derived from the epithelial cells, and are, therefore, of hypoblastic origin. From their source they emigrate into the tissues and circulation. He, furthermore, claims that all other lymphoid structures, lymph nodes, tonsils, pharyngeal tonsils, etc., have their source in this gland.

No sooner is the function of an organ established, than certain clinical phenomena are found waiting for elucidation. If it is the

function of the thyroid to generate lymphoid tissue, an overgrowth of this structure may be attributed to an excessive functional activity of the gland. The condition known as lymphatism, which occurs in children, is characterized by an overgrowth or hyperplasia of all lymphoid tissues; the pharyngeal, thoracic and abdominal lymphatic nodes are enlarged; the Malpighian bodies in the spleen is very prominent, and the thymus is frequently very much hypertrophied. The clinical interest in this *status lymphaticus* lies in the fact that these patients have hypoplasia of the heart, and, consequently, die very suddenly from slight causes. A similar condition is the so-called thymic asthma, which is characterized by hyperplasia of the spleen and thymus, and which results in sudden death.

Another interesting disease which may be, at least, remotely connected with overactivity of the thymus is hypertrophy of the faucial and pharyngeal tonsils. Adenoid vegetations in childhood may be partly due to such overaction.

Concerning a deficiency of lymphoid tissue little is known. Occasionally, individuals are seen who have very little or no tonsillar structures, but as to somatic weaknesses or disorders which might be caused by this deficiency, all is obscure.

ACHONDROPLASIA.

This is a disease of fetal life which causes deficient or stunted growth of the extremities and results in dwarfism. It has been mistaken for congenital rickets, but its pathogenesis is probable entirely different. The name was given to this dystrophy by Parrot, who differentiated it from other fetal dystrophies.

The distinctive characteristic of achondroplasia is the marked deficiency in the growth of the bones of the extremities, or more correctly, of the humerus and femur. The trunk development is normal and presents a marked contrast with the decided shortening of the arms and legs. As the child grows older this disproportion becomes more noticeable, the deformity attracting immediate attention.

Another distinctive feature is found in the head, which is very large, and differs sensibly from hydrocephalus, in that its size is due to an increase of bony cranial walls and not to a body separation of the bony segments. The genital functions are apparently normal, while in rickets the growth of this system is often very much retarded. As

in rickets, various bone lesions and deformities are common—such as beading, nodosities and curvatures. These deformities have caused the disease to be mistaken for rachitis.

Dentition is usually normal, contrary to what is regularly found in rickets. The hand is short and square, with the fingers separated; this gives the hand the appearance of a trident, and Marie ascribes to this peculiarity considerable diagnostic importance. Sometimes a lordosis is present. Marked deficiency of the growth and development of the pelvic bones is often present, and this leads to disastrous results in females, in later life.

An important diagnostic point is found in the well-developed muscles in persons having achondroplasia. The little fellows are very active and strong, and this is quite different from rickety children. The intellect is clear and these dwarfs may fill positions of trusts and responsibility.

In regard to the pathogenesis, little is known. Marie regards the dystrophy dependent on thyroid deficiency, and it is, therefore, related to cretinism; although, from a clinical standpoint, it must be sharply differentiated from this disease. The dwarfism is due to an arrest of growth in the cartilaginous epiphysis.

No effective measure has as yet been suggested in treatment; thyroid extract should be given for a long time if the disease is recognised early in life.

EDITORIAL COMMENT.

The St. Louis Medical Library.

Three years have past since the organization of the St. Louis Medical Library Association, and through its efforts this city has been enriched by the collection of a valuable medical library. Many times in previous years an attempt to create a medical library resulted in failure; hence, the great success of the present association should receive its merited applause and substantial encouragement. But this support seems to be lacking. Less than two hundred, out of fifteen hundred physicians of this city, are members of the association, or contribute to the maintenance of the library. In spite of this meager encouragement, the officers of the association have pushed steadily

ahead, until the library has grown large and valuable. Over 3400 volumes are found on the shelves. Nearly 200 journals, on all branches of medicine, both American and foreign, are received. The greatest value of the library lies in the system of indexing the original articles of the best journals. In a few moments the physician has the most recent literature on any subject before him. Over 20,000 articles on all the branches of medicine are thus indexed. To the Assistant Librarian much credit is due for the efficiency of this part of the library.

But the library labors under the disadvantage of lacking adequate financial support; it is really a pity that such should be the case. Every physician of St. Louis who prides himself on the progress of medical science should at once make up his negligence.

The Value of the Library to the Physician.

Every physician knows the utmost necessity of keeping well informed on recent progress in medicine. He owes it to his patient and to himself. The physician who becomes so engrossed in the work of an extensive practice and neglects to study the recent work of medical investigation, soon falls behind; once behind he will never gain what he has lost. No doctor can allow himself to become so busy as to neglect study.

But this study must often be condensed in a brief space of time. It is to enable the physician to save time that the library was established. Have you some difficult disease to treat? Do you understand the pathology of the disorder? Are you confused in regard to the course of an affection? Then spend an hour in the library; you can find in a short time what others say on the subject, and which might occupy hours of search in your own library.

Are you intending to have a consultation with another physician? Visit the library and have the most recent studies of the subject in your mind.

It is to the younger men particularly that the advantages of the library must strike most forcibly. He can not afford not to be a member. A visit once a week, if not oftener, will keep him informed on medical progress.

In the end it will be observed that the frequent visitor of the

library will be the best informed physician, who has a striking advantage in daily practice.

Voluntary Board of National Examiners.

The question of reciprocity in medical licensure has been discussed for several years, but no definite solution seems in sight. There are numerous objections to reciprocity among the several states, and the establishment of a National Board of Examiners, whose examinations shall be of such a high character as to command the respect of the several states is suggested. This will, however, imperfectly solve the difficulty, as most applicants, probably, would rather take repeated state examinations than travel a great distance to pass the examination of a board whose examinations are very severe. Altogether there seems little hope, and it is really questionable that there exists a great desirability to establish an interstate right to practice medicine. Each state holds the right to determine the qualifications of their own physicians, and decide who is eligible, and few states will surrender this right.

Phototherapy.

The most interesting study at present is phototherapy. It began with Finsen's work with the light-treatment of lupus; it received a strong support in the marvelous chemical effect of the x-ray; it has been brought forward to explain the sporulation of the hematozoa in the blood; and, finally, various kinds of light are recommended in different morbid conditions.

There is great danger that the intense enthusiasm will carry us too far; it should be remembered that this subject was discussed years ago; in fact, its study was followed by a popular craze; people lived in blue and red houses, had colored windows, and were marvously cured by baths of blue or red light. A perusal of "Kabbala," by S. Pancoast, a volume published twenty years ago, will dampen some of the excessive enthusiasm. This author connected science with oriental mysticism, and formed a treatise which will capture the unsophisticated, be he metaphysically or scientifically inclined. Before writing too much on the subject of red or blue light, read this book; and while it should not lessen our desire to study this all-pervading force,

it will enjoin a greater care in the conclusions derived from a superficial study of the subject.

Thyroid Extract in Puerperal Eclampsia.

It has been suggested that thyroid inadequacy may be a potent factor in the etiology of puerperal eclampsia. Nicholson, at the Edinburgh Obstetrical Society, affirmed that a deficiency of the thyroid secretion led to a condition of anemia, with consequent retention toxicois. He suggests that threatened puerperal eclampsia be treated by the administration of thyroid extract. He reports several cases which seem to show a marked favorable effect.

The symptoms of puerperal eclampsia and disorders known to be due to thyroid inadequacy (cretinism, myxedema) are very dissimilar, consequently, it does not seem, at first examination, rational that thyroid medication will be useful, and it will necessitate the accumulation of more evidence before the modern pathologist will be willing to admit the dependence of puerperal convulsions on thyroid inadequacy.

The Control of Tuberculosis.

In this number of the COURIER we present to our readers two interesting papers on the governmental control of tuberculosis. There should be no difference of opinion on the basic principles of this problem; namely, that tuberculosis is readily carried from one individual to another, and steps to prevent this will be the most effective in stamping out the disease. The controversy over the question, whether tuberculosis is a contagious disease is a mere quibble in words.

But society is not, as yet, prepared to accept the drastic measures usually advocated; it is questionable whether they will accept the notification of tuberculous patients without protest. Individuals can die and even infect others, but their individual rights must not be abrogated in the least.

Physicians are not yet educated to the standpoint to accept a law which brands the tuberculous or restricts his liberty. The storm of objection to the order restricting the immigration of tuberculous persons, raised by the New York Academy of Medicine, and the obstinate resistance of the St. Louis Medical Society to effective municipal

measures, prove that the soldiers in the active warfare against the spread of tuberculosis will not succeed.

We must, therefore, be content to wait. Gradually the people are learning that consumption is contagious, and when all have learned this, and begin to fear it as they do smallpox; then, and not till then, can we expect any effective legislative aid in the fight. Meanwhile we must instruct and educate.

DIAGNOSTICS.

In Charge of A. LEVY, M.D.

Acid-Proof Bacilli in Sputum.

In examining the sputum for tubercle bacilli, it should always be remembered that certain acid-proof bacilli which are common in the external world, being found in the cow's dung, soil, grass and hay, may find entrance to a lung otherwise affected; and, as they resemble the tubercle bacillus, may lead to an erroneous diagnosis. Like all supposedly pathognomonic symptoms, the finding of red-stained bacilli in the sputum must be corroborated by the clinical symptoms present. An occasional red bacillus found in the sputum may mean that one of these saprophytes has found entrance to the air-passages. These micro-organisms are often found in pulmonary gangrene. Several cases have been reported, in the sputum of which these acid-resisting bacilli have been found, and which had been mistaken for the tubercle bacilli.

New Way of Applying Nitric Acid and Other Reagents in Urinary Analysis.

1. A pipette is filled for a distance of from one inch to one inch and a half with the urine to be tested. Then this pipette is either carried under a stream of water and then dried with a towel, or all urine is removed from its surface by a damp towel.

2. This pipette, with its contained urine, is placed near the bottom of a bottle containing pure nitric acid, when the pressure of the index finger is lessened and the acid allowed to flow gradually up into the pipette.

3. When the pipette is seen to contain about the same amount of acid and of the urine, the finger is again firmly pressed and the pipette

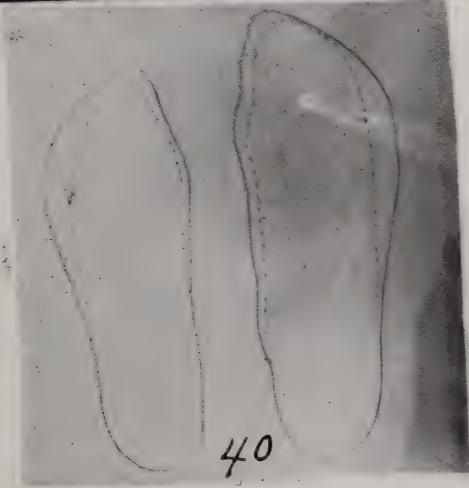


Fig. 32. Natives leaving Tien Tsin. Observe high caste women in foreground wearing small shoes indicative of deformity, compelled to hold on to one another for support. Behind is a woman of the working class with normal feet; she is carrying a child and walking erect.

Fig. 33. Front, plantar and back views of a pair of feet showing many and marked shoe deformities, viz.: Flat-foot and pronation, contracted tendo Achillis, hallux valgus, bunion, ingrowing-nails and hammer-toe, great crowding of all the toes and deviation from their respective metatarsals, corns and callosities, and folding of skin.

Fig. 40. Painless compression of feet. Solid lines show real outlines of feet; dotted ones outlines of same feet manually compressed without pain.

removed from the bottle and held toward the light, on a level with the eye, and, if albumin is present, a distinct white cloud in the form of a ring appears at the zone of junction of urine and acid.—Boston, in the *N. Y. Medical Journal*, May 24, 1902.

Diagnostic Importance of Excising Tissue Pieces Through the Esophagoscope.

Gottstein (*Arch. f. Klin. Chir.*, Bd. LXV, Heft 1) says the removal of small pieces of tissue through the esophagoscope for the purpose of determining microscopically the morbid condition has been done in a few individual cases. The author carried this out systematically and reported upon 47 such excisions which he had made in 34 cases. In most of his cases he had to deal with carcinoma. He further states that there is no danger to the patient if this is carried out carefully. Until the present time he had only practiced this in cases where an ulcerating process was going on. A negative result does not exclude carcinoma.

A New Sign in Thoracic Aneurysm.

Henry Lee Smith (*American Medicine*, May 17, 1902) mentions a new sign in thoracic aneurysm. This sign is elicited by combined palpation and percussion. The cricoid cartilage is grasped, as is done for tracheal tugging, while an assistant percusses the chest. When normal parts are percussed the palpating hand feels a distant and feeble jar (proximal ends of the clavicle excepted), but so soon as the aneurysmal area is reached, a shock, which is both direct and resilient in nature, is felt, and is somewhat suggestive of the sensation experienced by one when a rubber bag filled with water is simultaneously palpated and percussed. With the eyes shut, the author states, he was able to recognize in each case the peculiar modification of the percussion-stroke imparted to it by the aneurysm. This is all based upon but four cases thus examined. A larger material would better show the value of the sign. It is also to be determined whether this sign is present in mediastinal tumor.

Blood Examination in Pertussis.

Friedlander (*Cincinnati Lancet-Clinic*, April 19, 1902) states that in whooping-cough there is a relative increase in the number of lymphocytes in addition to leukocytosis which prevails. This may be

of some clinical value in the early diagnosis of this disease. In a case which he reports, the lymphocytes contributed 50 per cent of all leukocytes, and the total leukocytosis amounted to 24,000 to the c.mm.

The Clinical Value of Cytology, Cryoscopy and Hematolysis in Certain Surgical Exudations of Serum.

Charles Juillard (*Revue de Chir.*, February 10, 1902) concludes that cytological examination of exudates is of value. The intensity and character of the morbid process is determined by the finding of:—(1) Endothelium, (2) lymphocytes, (3) polynuclear cells. The first are found in exudates resulting from mechanical causes—as chronic hydrocele, certain forms of tuberculous arthritis, etc.; the second, in exudates of an infectious nature; the third, in those of an acute nature. Cryoscopy is not of especial value in diagnosis or prognosis of the condition producing the exudate; neither is hematolysis of practical importance in these conditions.

The Agglutination Reaction of the Bacillus Tuberculosis.

E. Rumpf and L. Guinard (*Deutsche Med. Woch.*, February 20, 1902) maintain that this reaction is of diagnostic value in spite of Koch's assertion to the contrary.

They publish the results of tests made in 107 phthisical patients—29 were in the first, 41 in the second and 37 in the third stage of the disease. The reaction was positive in 84 per cent of the cases. Diagnosis had been made in all of these cases by physical examination by finding the tubercle bacillus in the sputum. They agree with Koch that the intensity of the reaction depends on the state of immunity present and increases as the patient improves. In cases which grew worse, the agglutinating power of the blood diminished. Very rapid acute cases gave a negative reaction, also those cases which had recovered. The intensity of the reaction was increased by the administration of subcutaneous injections of Koch's new tuberculin. As for the technique, they employed the methods of both Koch and Arloing-Cournout; results were the same. The Arloing-Cournout method has the advantage that, in doubtful cases, the microscope will determine the existence of agglutination. The authors fail to mention anything about tests made in normal cases.

THERAPEUTICS.

In Charge of W. L. JOHNSON, M.D.

Acetozone (Benzyl-Acetyl Hyperoxid) in the Treatment of Typhoid Fever.

Eugene Wasdin (*Therapeutic Gazette*, May, 1902) has treated successfully a large number of cases of typhoid by giving upon admission to the hospital 1 grain of calomel combined with 1 grain of aloin and 2 grains of guaiacol carbonate, every four hours until the canal was well flushed. Also the patient was given from 1,500 to 2,000 cubic centimeters of the twenty-four hour old solution of acetozone (benzozone) daily. The diet was milk diluted with the acetozone solution. Effort was made to reach the colonial area in the lung (Dr. Wasdin believes that the primary germ colony occurs in the respiratory tract) by forced inspiration of the atomized solution of acetozone. Cold sponging was used. His conclusions are :

1. That the peroxide is efficiently germicidal under conditions favoring its hydrolyzation.
2. That it is innocuous to man and animals, being readily secreted through the kidneys as hippuric acid.
3. That in the treatment of typhoid fever and other bacillary diseases it is directly applicable to destroy the primary colony, provided it can be brought in contact with it.
4. That its special application in typhoid fever enables us to obviate intestinal infection and absorptive toxemia therefrom, thus favoring the formation of protective antibodies, and limiting, in many cases, the disease to its normal cycle.
5. That in those cases of inefficient reaction in typhoid fever its use tends to make the patient much less uncomfortable, thereby offering better results from appropriate serum therapy.

Contributions to Practical Therapeutics.

Albert C. Barnes and Herman Hille (*American Medicine*, May, 1902) have produced four new synthetic compounds of considerable value, and are not going to patent them.

Silver vitellin contains 30 per cent silver, does not coagulate albumin, is exceedingly soluble and very penetrating. It will doubtless

largely supplant silver nitrate and patented silver compounds in gonorrhœa, eye, nose and throat work.

Iron vitellin (tentatively thus called) is a *true organic* iron preparation having the formula $C_{47.51}, H_{5.1}, N_{17.14}, Fe_8, S_{8.3}, O_{21.24}$. It is a red powder, freely soluble in water, forming a beautiful clear red solution, neutral in reaction, tasteless and odorless.

An intestinal antiseptic and astringent—hexamethylenetetramin tannin proteid, and contains 50 per cent tannin. This (and the other products) have been widely tested in some of the largest hospitals of the world in typhoid and infantile diarrhea.

Also a new dry surgical dressing, chemically mono-iodid-dibismuth, methylenedicresotinate—a pink, impalpable, odorless, tasteless and insoluble powder, combining 45 per cent iodin and 3 per cent formaldehyde in definite chemic combination. It is absolutely non-toxic externally or administered to dogs, in 30-grain doses, thrice daily.

[These combinations are the result of eight years hard work investigating and experimenting and since they are to be made eligible to the pharmacopea and not patented, we think American physicians should at once test and appropriate them.]

Treatment of Worms.

M. B. Pollard (*Medical World*, May, 1902) counted 168 worms from six to eight inches long from a boy 9 years old, for whom he prescribed the following :

Rv	Olei chenopod anthel.....	3j
	Fl. ext. spigeliae et sennæ.....	3ss
	Santonin.....	gr. viij
	Pulv. acaciæ.....	3j
	Syp. rhei aromat.....	q.s ad 3j

M. Sig.—Teaspoonful, previously shaken, three times a day, one hour before meals, to be followed in three hours after taking the last dose with half-ounce castor oil with ten drops of turpentine.

He wants to know if anyone can beat the number.

Histogramol,

Considerable interest is being shown in pharmacological circles in France, over the new organic derivative of arsenic—"Histogénol." The author of the preparation, Dr. A. Mouneyrat, after experimenting with the sodium methylarsenate of Gautier, on tuberculous patients in

all stages, found that one serious alteration—the persistent phosphaturia, was in no wise affected by this latter medicament. He conceived, therefore, the idea of adding phosphorus in a highly assimilable form to the methylarsenate, and used for this purpose, nucleinic acid.

His results in phthisical conditions, have been remarkable. He reports 120 cases of the most marked improvement, and believes that this organic phosphoro-arsenical drug is destined for a high place among antiphthisical agents.

An increase of mononuclear and polynuclear white cells, as well as of the red is noticed, with subsidence of the phosphaturia, the expectoration, the cough, and the loss of flesh.

Hot Flushes of the Menopause.

Dodge (*Ibid.*) says duboisin $\frac{1}{250}$ gr., five or six times daily, is as much a specific for this condition as quinin is for chills.

Prescriptions.

W. J. Robinson (*Merck's Archives*, April, 1902) gives notes on some methods and combinations which proved particularly valuable in his personal experience. He considers the following the best and never-failing combinations in

Thrush:

R	Sodium sulphite.....	3ij
	Glycerin	3vj
	Peppermint water.....	3ij

M. Sig.—Swab mouth and tongue thoroughly with this on cotton around finger. Repeat every half to one hour.

Internally he gives to correct acidity:

R	Magnesiæ (calc.).....	3ij
	Bismuth subnit.....	3j
	Syr. rhei arom.....	3ijij
	Cord. anisi.....	3v

M. Sig.—Half to one teaspoonful, three to five times daily. Around the anal region this drying powder:

R	Zinci oxidii.....	
	Bismuth subnit.....	aa 3ij
	Lycopodii.....	3iv

M.

For Dentition: When gums are hot and tense, the frequent

rubbing of the gums with the following he believes aborts eclamptic attacks :

R	Potassii bromidi.....	gr. xx
	Chloralis hydrates.....	gr. x
	Tr. aconiti rad.....	m̄v to xv
	Spir. chloroformi.....	5j
	Mucil. ulmi.....	ad 3j

M. Sig.—At the same time three to five-grain doses of potassium bromid and chloral hydate in 1 to 2 grain doses may be given internally, or double dose per rectum.

For Erysipelas the following :

R	Ichthyol.....	3j-3ij
	Glycerin.....	3j
	Aq.....	ad 3x

M. Sig.—Externally; and a saline laxative internally.

Lumbago :

R	Camphor chloral.....	3j
	Acid salicylici.....	3ss
	Menthol.....	gr. xx
	Pulv. capsici.....	3j
	Ol. sinapis.....	gtt. viij
	Adipis lanæ.....	3iv
	Petrolati.....	q.s. ad 3ij

M. Sig.—Applied with vigorous friction.

Joint rheumatism :

R	Menthol.....	3j
	Acid salicylici.....	3ij
	Methyl. salicylat.....	3j
	Alcohol.....	q.s. ad 3j

M. Sig.—Paint joints briskly with camel's-hair brush, cover with absorbent cotton and oiled silk and bandage snugly, not tightly.

Pleuritic pains :

R	Camphor-chloral.....	3j
	Guaiacol.....	3j
	Menthol.....	3ss
	Methyl salicylat.....	3j
	Adipis lanæ.....	ad 3j

M. Sig.—A small quantity to be rubbed in well and surface covered with cotton and oiled silk.

SOCIETY PROCEEDINGS.

MEDICAL SOCIETY OF CITY HOSPITAL ALUMNI.

*Meeting of March 20, 1902; Dr. Given Campbell, Jr.,
President, in the Chair.*

Dr. F. A. WINTER read a paper (see page 1, this issue) on

Observation on Gunshot Wounds.

DISCUSSION.

Dr. A. H. MEISENBACH said, in opening the discussion, that the history of the development of the small caliber arm is exceedingly interesting. The small caliber arm was first introduced by France in 1866; Austria followed France, in 1888, and Belgium, in 1889, introduced the Mauser gun, the type which is now practically accepted, with some variations, as the essayist has explained, in all the civilized armies of the world.

In order to establish the effects of the small caliber bullet, Von Bergmann in 1889 instituted a series of experiments with the Mauser arm, taking various ranges and positions of the objects experimented upon. The speaker exhibited the original dissertation of Von Bergmann. This showed the results of the experiments of gunshot wounds, especially upon the long bones. The size of the bullet for these modern guns ranges from 5 mm. to 8 mm. and the distances at which Von Bergmann made the wounds shown was from 400 meters to 800 meters. He arrived at a conclusion which has been corroborated by other observers, as well as by the essayist this evening, namely: that the modern type of weapon is the most humane arm ever introduced into the armies of the world. It has a long range and a low trajectory—a bullet shot at 500 yards without raising the sights. The high velocity is an important factor. This is illustrated by the wounds on long bones. He exhibited some photographs showing the effects of soft bullets on hard objects. Among hunters it is still a matter of argument whether the high velocity of the small arm bullet or the 48-

caliber is more efficient. It is claimed that the shock on large game is not as great when the small bullet is used. The "dum-dum" bullet has a different effect because of the spreading of the soft bullet. The English were the first to introduce the "dum-dum" bullet. In the battles with the Indian tribes, it was found that the Indians were not rendered unfit for service; so the soldiers split the jacket, in order that, when the bullet struck an impediment, it spread. The "dum-dum" differs from the steel jacket, the latter being solid at the point and filled with lead while the former is solid at the base and the projecting point is soft lead. The small caliber bullet penetrates without the terrible crushing effect of the soft bullet. From a practical standpoint this is of value. A bullet at 1,000 yards will go through several men without producing a tearing effect, and yet the shock is sufficient to put the men out of service. In this connection, he said, it was very interesting to note the report by General G. M. Sternberg in regard to the effects of injuries and comparisons between the Spanish-American war and the Rebellion. In the Spanish-American war in 1899 there were 580 killed and 4,300 wounded. 11.9 per cent killed, 88.1 per cent wounded. In the Civil war, on the Confederate side, there were killed 51,425, wounded 227,871. On the United States side the killed was 59,810, wounded 280,040. The percentage of killed and wounded was $82\frac{5}{100}$ per cent, so that 1 was killed to every 4.56 wounded. In the Spanish American war 1 was killed to every 7 wounded. Continuing this further we find that in 1899, 471 wounds were made by the Remington 45-caliber bullet. Of the 4,333 wounded 259 died in 1899, or 6 per cent.

Coming down to regional surgery there were 6,576 fractures of the femur; 2,923 primary amputations; 186 resections; 3,467 treated conservatively. The number lost by surgical intervention in 1899 were from fractures of the femur, 6 primary amputations; 2 resections; 74 treated conservatively, of all operations done on injuries and wounds.

In penetrating wounds of the thorax the percentage fell from 62 in the Civil war to 7 in the Spanish-American war. That is a great falling in mortality.

In 1898-99 there were 116 cases of penetrating wounds of the abdomen, with 81 fatalities, or 70 per cent, a falling off of 17 per cent in comparison with the Civil war. Only 10 cases of laparotomy with

9 fatalities in the Spanish-American war, and the essayist has lucidly shown us that the conditions are not favorable for operative work and we all know why they should not be.

In fractures of cranium by gunshot in the Civil war there were 4,243 cases with 2,514 fatalities, a percentage of 59.2. In 1898-99 there were 68 cases with 37 deaths, or 54 per cent of fatalities. The difference of injuries to the cranium in the two wars is not very striking. Here the effect of the small caliber bullet has been well demonstrated by the essayist in the cans exhibited which had been fired into by these bullets. When we consider the different conditions under which surgery was practiced in the two wars we can readily understand why the results are more favorable to the Spanish-American war.

During the period between the Civil war and the Spanish-American war surgery has received an immense impetus, in fact, revolutionized; the surgery of the present day being to the past as day is to night. The size and velocity of the bullet is an important factor in determining the character of the wound. A bullet of small caliber, with a solid, impermeable jacket and an immense driving force behind it makes a clean-cut wound with very little contusion and under an aseptic dressing, acts like an incised wound. He thought Senn, and other surgeons, had reported unmistakable cases where small bullets have traversed the abdominal cavity and the patients recovered without surgical intervention.

What struck the speaker as being rather unique, was the driving force of these small bullets being so great that they carried with them adventitious material into the wounds; namely, clothing. One would expect the Remington bullet to carry more before it and small caliber bullet less liable to do so, but the reverse seems to be the case. This recalled the result of an abdominal wound received by a man in duel, in Germany. A laparotomy was performed and the intestinal perforations stitched but the patient died. At the autopsy it was found that the perforations had all sealed nicely, but at the point of entrance of the bullet was found a piece of clothing under the peritoneum which became the nidus for infection. So the speaker felt that Dr. Winter's remarks in regard to exploring wounds of the bone for material carried in, would hold good for other wounds.

Another important factor that has been so conducive to the favorable results of wounds in the late war with Spain, is the primary aseptic

dressing which every soldier carried. This is a most important thing in surgery, and the man who first handles the case is to a large extent responsible for the ultimate result.

Another thing which has made military surgery of the present day so successful, is the manner of transporting patients, and the hospital corps. This is immeasurably superior to what was had in former wars and we have to thank an American surgeon for the initiative in this work, namely, J. Marion-Sims, in the Franco-Prussian war. Another important factor leading to the favorable outcome of many cases is the facility we have for determining the exact condition. Formerly there was no way of telling where the bullet could be found. Now, every well appointed army has, either at its base or in close connection with the field, an X-Ray apparatus. All in all, the advances made by military surgery have kept pace with the advances made in other departments of surgery. Of course, there is yet a great deal to be wished for. As the essayist has told us, this class of cases are handled when assistants are few and the men on the firing line are overworked and the minimum of attention must be given to each in order to see all instead of the maximum of attention to each and many neglected.

Dr. N. W. SHARPE, at two former meetings of the Society in which the subject of gunshot wounds had come for discussion, had had the pleasure of speaking on the subject, had reviewed the literature somewhat at length, and gave the results of experiments carried on, so that in what he said this evening it would be unnecessary for him to recapitulate the academic data, but rather desired to render a tribute from a civil operator to one who had experienced active service in the field.

He recalled in the early days of the struggle with Spain that "the yellow press" went through a series of contortions over what it was pleased to call the savagery of the Spaniards in the contests which occurred in the vicinity of Guantonomo Bay. To those who followed the accounts it was not a difficult matter to determine that the wounds which were so shockingly described by the Associated Press were the logical result of the small caliber bullet under circumstance similar to those delineated to-night. Later it was officially declared that there was evidence that our opponents used methods or means which were not indorsed by the conventional positions of modern warfare.

There are numerous differences in the surgical manipulation of penetrating wounds received in civil and military life. These phases of divergence are not more clearly marked in any other area than the abdominal. Interesting reports have been received from the surgeons in the field in South Africa; and it is not difficult to see why so many disastrous results have followed surgical interference. He recalled that in the field-hospital, on one occasion, an observer records (incidentally), that after the wound had been exposed for operation the entire operative field was almost instantly covered with flies. We know, too, especially in the early days, that clouds of dust covered everything, and if we further recall in this connection that enteric fever was rife and the water supply limited, and that both the dust and water were in all probability germ laden, we marvel that the wounded recovered at all rather than that the mortality was high.

There are at least three radical points of difference between the condition of a wound inflicted in the abdominal cavity, received in one case in the field, in the other in civil life. The first, is the physical condition of the average soldier. He lives on a simple diet, follows an out-of-door life, enjoys active exercise, all of which makes him vastly superior physically to the average individual wounded in civil life. The second is that, in the large majority of cases he is further protected by the prompt and proper use of the "first aid package." The third is that not infrequently the stomach and intestines of the soldier wounded in battle are comparatively empty. Elaboration of these vital distinctions seems unnecessary.

The point made by Dr. Meisenbach in regard to the shock produced by the small caliber bullet as compared with the shock of the large caliber is of interest.

Dr. R. B. H. GRADWOHL asked what percentage of penetrating wounds of the abdomen recovered without laparotomy.

Dr. WINTER said he believed 15 per cent would be a conservative estimate of recoveries from abdominal wounds without intervention. Those operated upon uniformly, as was to be expected, died.

He then exhibited a first aid package such as is used in the army. It contains two aseptic pledges of gauze wrapped in paraffin paper which is supposed to be thoroughly sterilized in a 1-1000 bichloride solution; a sterilized cambric bandage and a triangular bandage which is for application on the exterior of the wound. These are sup-

posed to be in an aseptic condition. He had frequently observed wounds involving a material laceration of tissue; this dressing was applied and left for ten days and the wound found to be in a perfectly aseptic condition.

In this connection he said the result of wounds of the cranium by these small bullets was almost inconceivable. They were attended and accompanied by enormous laceration of brain structure and the skull. He had seen the entire top of the skull literally blown to pieces. As an interesting point in the effect of these Krag-Jorgenson balls, he mentioned an occurrence at Jefferson Barracks some years ago. Two soldiers were sitting in a tent the diameter of which was not more than 16 feet, and one was cleaning his Krag-Jorgenson carbine when it went off. The man in the tent with him went on conversing in his ordinary voice and spoke of the possibility of shooting a man while doing that sort of thing, but in a few moments looked down at his leg and discovered that he was shot. The bullet was found to have struck in the tibia about two inches above the malleolus and the man didn't know he was shot until he saw the stream of blood. Later this man fell from a porch and died. Post-mortem, this specimen was secured, and nothing was found to indicate a comminution. It illustrates the uncertainty of the effects of these bullets.

In regard to adventitious material being carried into a wound, he said the uniform of the troops in the tropics consisted of a blue flannel shirt, a light cotton undershirt, and no blouse. The blue flannel is very serviceable, but every time a man is shot through this shirt we may look for some of the material to be in the wound. He believed the small caliber bullet does carry a lot of this adventitious material.

The maximum explosive effect of these bullets occurs in what is known as the explosive zone, that is 600 meters from the muzzle of the gun. He had never seen a gunshot wound of the head which did not result in a wholesale comminution.

Dr. SHARPE mentioned in response to the query of the President that but to-day he had seen a report of the surgical history of an officer that had received a gunshot wound of the skull (the report was incomplete, in that it did not give the range at which he was struck): A small caliber bullet struck him in the forehead, completely penetrated the brain and made its exit through the occiput. The man was taken up apparently dead, transported to the field-hospital, later to the

base-hospital, yet nothing was done of a radical fashion. He remained in an unconscious condition for something over two months and then finally was invalided back to England, where Victor Horsley had recently removed from twenty to thirty fragments of bone. There is now reasonable evidence of a probable recovery.

Dr. WINTER mentioned a case reported from South Africa, by an English Surgeon, in which seventy-two fragments of the skull were removed after a wound by a small caliber bullet at short range.

New Dean of the Medical Department of Washington University.—Dr. Robert Luedeking, professor of diseases of children, has been elected Dean of the Washington University Medical Department to succeed Dr. Shapleigh.

Harmless Tobacco.—Tobacco is said to be deprived of all its poisonous constituents by treating the leaves with tannic acid, this also removes some of its flavor, which is restored by macerating them in a decoction of the leaves of *origanum vulgare*. Cigars made of the leaves so treated are sold, and they are absolutely devoid of all toxic property. Such cigars might be especially recommended where it is imperative, for therapeutic reasons, to withdraw nicotine, and the patient objects to complete abstention from tobacco.

Cholera in Manila.—Although cholera has appeared in Manila, the soldiers will, no doubt, be comparatively safe, since the Board of Health has taken most energetic methods to stamp out the disease. All the surface-wells are to be filled up, the whole river is guarded, distilled-water is supplied to the amount of 13,000 gallons daily. Every shack where a death occurs, is burned, and all the inmates are taken to the detention camp outside the city. All vegetables, except rice and potatoes, are to become a government monopoly and will be sold cooked.

It will readily be perceived what a tremendous amount of labor this necessitates, but it is only by such vigorous means that the infection can be eradicated.

REPORTS ON PROGRESS.

MEDICINE.

In Charge of W. M. HOGE, M.D.

Herpes Zoster.

Arthur Van Harlingen, (*American Journal of Medical Sciences*, January, 1902). Under the designation zoster or herpes zoster is to be understood a specific infectious or possibly contagious exanthem, characterized in its invasion by lassitude, general malaise, chills, increasing temperature and more or less digestive disturbance.

Following this, in most cases, neuralgic pains develop along certain nerve parts or metameric areas, together with the development of enlarged lymphatic glands.

After a period of several days, more or less, during which the symptoms mentioned, or some of them, have manifested themselves, the exanthem shows itself and runs through a fixed cycle of development, acme and decrudescence.

The general symptoms, particularly the neuralgic pains, may continue during this period, or, in many cases, may diminish, usually disappearing with the eruption. In other instances, and particularly in older persons, the neuralgia may form a prolonged succedaneum to the regular course of the disease.

Probably, in a certain number of cases, however rare, various visceral complications may accompany the affection. Such are paralysis of sensory or motor nerves, inflammations of the pleura, peritoneum, articulations or viscera.

The affection attacks principally the posterior ganglia (sensory) of the cord and the Gasserian ganglion. From thence, inflammation and degeneration may extend along the nerve trunks and fibers. No other lesions have as yet been discovered post-mortem, although it is probable that further observation will result in tracing the disease in the various membranes and viscera when its presence has been clinically noted.

The numerous examinations of the skin lesions and such blood examinations as have been made have not as yet thrown any light upon the nature of the disease.

Zosteroid eruptions are not infrequently observed in cases of poisoning from coal gas, after the ingestion of arsenic, following injuries of the nerves, as a result of moral shock, as grief, or in hysteria, and probably under other conditions. These, however, are to be distinguished from the true herpes zoster as defined above.

Angioma as a Symptom of Cancer.

Leser, (*Munch. Med. Woch.*, December 17, 1901) found in many cases of carcinoma a number of raised spots varying in size from that of a pin-head to that of a lentil, of a reddish color, which did not fade on pressure, whose structure was that of an angioma.

Investigation instituted with this object, determined that in 50 cases of carcinoma in one only were angiomata absent.

In 300 other surgical and medical cases, these tumors were found only in a few cases in patients of an advanced age.

He concludes that they do not occur in healthy subjects or persons suffering from other diseases in early or middle life, nor in large numbers even in old age.

When found in large numbers in young or middle age there is every reason to suspect carcinoma.

The detection of a number of small angiomata in the skin of an apparently healthy person is suggestive of beginning carcinoma.

The abdomen appears to be the favorite site in carcinoma of the uterus.

In other cancers they are most apt to appear on the skin superficial to the seat of disease.

Further investigations are needed to determine:

1. Whether the angiomata are present before the first symptoms of carcinoma occur, and whether they increase in number with the growth of the tumor.
2. Whether they are present in those cases, as congenital abnormalities, in which a favorable soil for the development of cancer is present.
3. Whether they are to be regarded as a result of malignant tumor, or
4. Merely as frequent accompaniments of the same.

It is further necessary to investigate as to whether they accompany other forms of malignant tumor, as sarcoma.

Phrenic Nerve Injuries.

Schröder and Green (*Ibid.*, February, 1902):

1. From clinical and experimental data it would seem that the diaphragm is not an essential muscle of respiration.
2. That as the symptoms commonly described as caused by an irritation of the phrenic nerve were uniformly absent not only in the operation but in all subsequent experimental work as well, it is safe to infer that they may have been due to something other than a simple injury to the phrenic.
3. That while from an anatomical point of view the diaphragm is undoubtedly enervated by branches from the intercostal nerves, this nerve supply is secondary to the phrenic, and is insufficient to carry on the action of the diaphragm after division of the phrenic.
4. That a division of the phrenic nerve, producing a partial collapse of the lower lobe of the lung on the affected side and an atrophy of one-half of the diaphragm, might predispose to infection of the lung or be followed by diaphragmatic hernia.
5. That a division of one phrenic nerve in man, resulting in paralysis of one-half of the diaphragm only, is not necessarily fatal.

Localization of the Mental Faculties.

Chas. Phelps (*Ibid.*, April and May, 1902) after analyzing a number of cases of cerebral injuries and tumors, concludes:

1. In every instance but two, laceration of the left frontal lobe was attended by default of intellectual control, and the lesion was usually, if not always, of the pre-frontal region.
2. In every instance in which the laceration was confined to the right lobe the mental faculties were unaffected, except as they were obscured by stupor or delerium occasioned by coincident general lesion.
3. Compression or contusion of the left lobe only exceptionally produced specific intellectual disturbance. Also:
 1. The more absolutely the lesion is limited to the left pre-frontal lobe the more positive and distinctive are the symptoms of mental default.

2. The integrity of the mental faculties remains unimpaired in right frontal lesions, no matter how extensive, except as obscured by stupor or delirium.

Inoperable Septic Peritonitis.

Horace Wetherill, M.D., (*Journal American Medical Association*, May 24, 1902) says:

1. The treatment of septic peritonitis by surgical measures on the one hand, or by rational medical measures on the other, must be determined in each case: First, through a carefully-made differential diagnosis as to the source of infection; second, through an estimate of the apparent virulence and diffusion of the infection; and, third, through consideration of the time since the infecting material was injected into the cavity.
2. Infection from the intestines, veriform appendix and oviduct are apt to be dangerous in the order given.
3. Physiologic rest of the intestines favors limitation of the area of peritoneal involvement and the saving of life, and is best attained by the maintenance of an empty bowel and the avoidance of cathartics.
4. Cases of diffuse peritonitis with profound local and general symptoms must be regarded as inoperable.
5. Early operation, before diffuse peritonitis taken place, is safe, and in most instances, to be advised if the environment is favorable and an experience surgeon at hand. Interval operations are certainly advisable after recovery from diffuse peritonitis from any source.

NEUROLOGY.

In Charge of M. A. BLISS, M.D.

Psychic Treatment.

Runge (*American Journal of Insanity*, No. 2, 1901) presents an attractive review of the results of psychic treatment of the insane, and cites some experience of his own in the St. Louis Insane Asylum, which has for number of years been under his very efficient management. In St. Louis we all know the changes wrought among his "guests" by Dr. Runge, and some of us know also that Mrs. Runge has aided him with tireless enthusiasm in bringing back to reason's

realm many whose greatest need was a psychic leader with a kind heart.

Runge writes of the influence of religious services, entertainment and occupation. Religious services to be helpful must be of a certain character which can only be determined from a therapeutic point of view; all exhortation calculated to arouse emotional excitement is forbidden.

In the matter of entertainment each patient is, so far as can be arranged, asked to contribute something to the entertainment of all the others, and Dr. Runge is particularly skillful in seeking out the method and removing the embarrassment which is felt as keenly by the insane as the sane.

Visits are made to the "summer gardens" and to theaters, and the psychic influence of contact with the general public, and a certain freedom from restraint incident to the outing, proves very beneficial. Out-door games in which a spirit of emulation is encouraged by the offer of small prizes arouses much interest among the participants and onlookers. The celebration of Independence, Thanksgiving and Decoration days is not forgotten, and visits from former patients and from relatives and friends of present patients are encouraged as far as the conditions will allow.

The matter of occupation proves, as with neurotic patients generally, the source of greatest difficulty. Caution must be used not to fatigue too greatly, and there must be some result from the labor beyond that of physical improvement. Patients might be put in charge of small areas of land and compensation for the proceeds provided for. More than any other factor, a corps of well-paid, carefully selected and trained attendants helps to provide for this matter of occupation—by example leading to psychic stimulation and ever ready to suggest, to help, or to demonstrate useful employment.

Uniforms have been abandoned so that no suggestion of military discipline shall remain, patients and attendants mingling together without the glaring, distinguishing mark of authority of the latter.

Causation of Multiple Neuritis.

M. Allen Starr (*Medical News*, January 25, 1902) summarizes the causes of multiple neuritis and discusses various sources of poisons producing this condition which went unrecognized until very recent years.

1. Toxic cases due to the action of a poison derived from without the body.—(a) Metallic; arsenic, lead, mercury, copper, phosphorus, and silver; (b) Non-metallic; alcohol, carbonic oxide gas, bisulphid of carbon, sulphonal and trional, the coal-tar products and nitrobenzol.

Arsenic from wall paper, furniture covering, artificial flowers and toilet powders is mentioned, and a discussion of its occurrence in glucose derived from starch by sulphuric acid is mentioned in connection with the arsenical poisoning from beer in England. Especial attention is called to the pigmentation in this disease.

Painters, plumbers, type setters, makers of lead toys, earthenware, glaziers and fretted glass may have lead poisoning. Old lead pipes may contaminate the water flowing through them, and horses as well as men may suffer from lead palsy from drinking the water. Copper poisoning occurs among brass and copper workers. Phosphorous poisoning among match producers, mercurial poisoning among mirror-makers, and silver when taken medicinally.

2. Non-metallic substances produces neuritis much more commonly, and alcohol heads the list. Small quantities among susceptible persons may produce trouble, and those who take patent medicines may fall victims to unrecognized alcoholic poisoning. Especially attention is called to a mild multiple neuritis characterized by numbness in the extremities, occasional neuralgia, general enfeeblement, and edema of the feet, which may not go on to ataxia or paralysis.

Coal-gas and sulphid of carbon are mentioned, the latter among workmen in rubber factories.

The coal-tar products, used extensively, employed medicinally, are all liable to produce neuritis, and the aniline dyes also used medicinally, as methylene blue blue have been known to cause trouble.

3. Toxemia from infection; diphtheria is a most common cause, but less frequently than before the use of antitoxin. Severe pharyn-

gitis, the grippe, typhoid, typhus, malarial and scarlet fevers, measles, mumps, whooping cough, smallpox, pneumonia, erysipelas, gonorrhœa, puerperal fever and septicemia of any origin are all known causes.

4. The third class comprises what are known as dyscrasias some of which are of bacterial origin, as tuberculosis and rheumatism, diabetes, gout and carcinoma are mentioned as causation agents.

5. Fourth, certain cases known as idiopathic. Starr suggests intestinal fermentation may explain some of these. A case is cited showing how some cases baffle the most searching inquiry.

Recurrent cases are rare, but Starr mentioned Lerau's case which suffered from nine attacks in successive years.

PATHOLOGY AND BACTERIOLOGY.

In Charge of CARL FISCH, M.D.

Experiments with Yellow Fever Fomites.

J. W. Ross (*New Orleans Medical and Surgical Journal*, May, 1902) undertook at las Animas Hospital, Havana, Cuba, a repetition of the experiments made by the Yellow Fever Commission, under Reed, in 1900. Two rooms were prepared, disinfected and made mosquito tight. One room, used as an observation room was equipped with sterilized furniture and bedding; the other room, the experimental one, was filled with soiled clothing, laundry and bedding of yellow fever cases. Eight non-immune persons, just arrived as emigrants, were, after observation and examination in the first room, transferred to the second room and kept there under close watch for longer periods. The persons were induced to use the clothing, etc., of the yellow fever cases, to stir and shake frequently the soiles articled, and at the end of the experiment were transferred to the observation room. The experiments extended over three months, none of the individuals subjected to them developed yellow fever. Thus the authors fully confirm the former observations of Reed and Carroll. They end with the emphatic assertion, that for quarantine purposes the disinfection of clothing, merchandise, etc., is absolutely unnecessary.

Second Annual Report of the Cancer Committee.

The Second Annual Report of the Cancer Committee to the Surgical Department of the Harvard Medical School (*Journal of Medical Research*, Vol. II, No. 3).

The Analogies Between Plimmer's Bodies and Certain Structures Found Normally in the Cytoplasm.

E. R. LeCount (*Ibid.*, Vol. III, No. 4).

The very important and interesting material accumulated in these publications, although not bringing anything entirely new, is invaluable as a sober and scientific control of the assertions of the cancer parasitologists; if one looks over the series of so-called cancer-parasites so far described, one wonders whether the credulity or the courage of their authors is more astounding. If it comes to the mixing up of organisms, like the plasmodiophora Brassicæ with the formations found in cancer tissue, the limit seems to be reached; it is certainly evidence of the insufficient level of general knowledge of biologic disciplines among those authors.

As all gross mistakes lead to something good, the zeal of the parasitologist has called the attention to the fact that in our pathologic and histologic studies one great class of phenomena has almost altogether been neglected, the finer texture of the various protoplasmic constituents of the cell. What appeared to be the domain of the cytologist, begins to be common property, and, no doubt, a deeper insight into the normal and pathologic conditions of tissue-cells will be achieved.

To have first called the attention to this fact, is Borrel's great deed by showing the identity of certain parasites with that of a normal constituent of the cell, the centrosome. The greatly improved methods have facilitated the demonstrations of this organ, the number of cell-forms in which it is regularly present, becomes greater every day. As to the particular question of cancer parasites these studies enable us to clear up the nature of certain peculiar structures that, while not observed by the ordinary methods, are brought out by a more delicate and careful way of preparing the material. The impossibility of discovering the origin of cancer and certain misinterpreted analogies with infection led to the search for parasites, and it was the irony of fate that now cancer-tissue was examined with methods that never had been applied as a routine to other histologic or pathologic material. The findings made in this way were illogically attributed as peculiar to

cancer-cells, and from failure of knowledge of the achievements of normal cytology, their nature was not understood; they were called parasites. This chaos begins to clear up, and the contributions, the title of which heads this review, go far in this direction.

It would be impossible to give a review of the observations in detail; a study of the report itself is necessary and will fully repay for the time spent on it. We must confine ourselves to give the general conclusions of the different authors of these papers. They say:

1. That the lesion produced by the coccidium oviforme is essentially a process of chronic inflammation and is not analogous to the lesion seen in cancer.
2. The lesion in *molluscum contagiosum* is characterized by certain changes in the epidermis, is not due to the action of a protozoon, and is not analogous to cancer.
3. The so called blastomycetes (*saccharomycetes*) of Sanfelice and Plimmer are torulæ.
4. The lesions produced by these blastomycetes (torulæ) are essentially nodules of peculiar granulation tissue, and not cancerous, nor in any sense true tumors.
5. Blastomycetes are not constantly present in human cancers.
6. The peculiar bodies seen in the protoplasm of cancer-cells are not parasites, nor the cause of the lesions, but probably are in part, at least, atypical stages of the process of secretion by glandular epithelium.

The reviewer takes issue with the authors on the last point, that is not more than a suggestion and not strengthened by any facts, the more so since in opposition to them he must assert that these formations are very often and plentifully found in epitheliomata (no secretion) and even in not secreting normal tissues (testicle, ovary). We conclude with the résumé of LeCount's paper that was published independent of the report:

"I believe that we can safely state that there are analogies between Plimmer's bodies in cancer-cells and certain structures in the cytoplasm of normal cells, and that we are warranted in requiring enthusiastic advocates of the parasitic theory of carcinoma, who use Plimmer's bodies as a support for their views, to exclude or account for the centrosome and the enveloping variously-named formations of the archoplasm, in carcinoma cells."

SURGERY.

In Charge of

A. V. L. BROKAW, M.D., and E. C. GRIM, M.D.

Subcutaneous Injection of Paraffin in the Correction of Nasal Deformities.

Harmon Smith, of New York, gives methods used and photographs of four cases injected by himself and others.

The use of paraffin for the correction of nasal deformity was first tried by Gersuny, of Vienna, in 1900. He reported two cases, one of two years' standing, with no visible changes in the contour of the nose or any softening of the paraffin. He also recounted a case where the injection was in another part of the body, and though the patient passed through typhoid fever running a temperature as high as 40°C., no disturbance to the paraffin resulted, other than temporary softening.

Smith began his experiments on the cadavers and carried them out on rabbits and showed that the operation is both possible and without danger. He believes there are no changes in the tissues other, perhaps, than the formation of a protective capsule. He gives his method as follows:

In my clinical work I have observed rigid asepsis and have used five minimis of a 4 per cent solution of cocaine prior to the paraffin injection.

The injection has been accomplished with but little pain at the time. The paraffin is sterilized before using. I have it in an agate vessel holding about three ounces, and this I suspend over an alcoholic lamp until it melts and bubbles—expelling the air, the temperature being about 115°F. Then, with a forcible aspirating syringe and a large needle I draw the paraffin up and evacuate the air-bubble, and submerge the syringe needle and all in sterile water at 120°F. This keeps paraffin in liquid form. Then, uplifting the soft tissues of the nose above the dorsum with the left hand, I insert the needle well beneath the skin, carrying its point beyond the site of greatest deformity. If this is at the root of the nose, I insert the needle three quarters of an inch above the tip and with its point upward. If the deformity is at junction of nasal bones and cartilages, I insert the needle at a point over the nasal spine, directing the point downward.

The injection is made slowly, at the same time withdrawing the needle and using the thumb and index-finger of the left hand to mould

the paraffin to the necessities demanded by the peculiarity of the deformity. Unless care is exercised, the paraffin is likely to force its way to the inner canthi of the eyes, where there is a mass of loose areolar tissue.

The paraffin remains plastic about half a minute and can be moulded as desired during this time. Two of my patients remained in the hospital two days, and some redness and swelling resulted, but under the influence of ice—one hour on and one hour off, this readily subsided. No pain was experienced except a soreness on pressure, which lasted about a week. The swelling had all disappeared before this time.

While the result is not an absolutely perfect nose, yet there has been such marked improvement as to justify like procedures in all such cases.

Removal of Foreign Body From Bronchus.

At the St. Joseph Meeting of the Missouri State Medical Society, A. V. L. Brokaw, of St. Louis, reported an interesting case of successful removal of a foreign body (a brassheaded upholsterer's tack) from the right bronchus of a child.

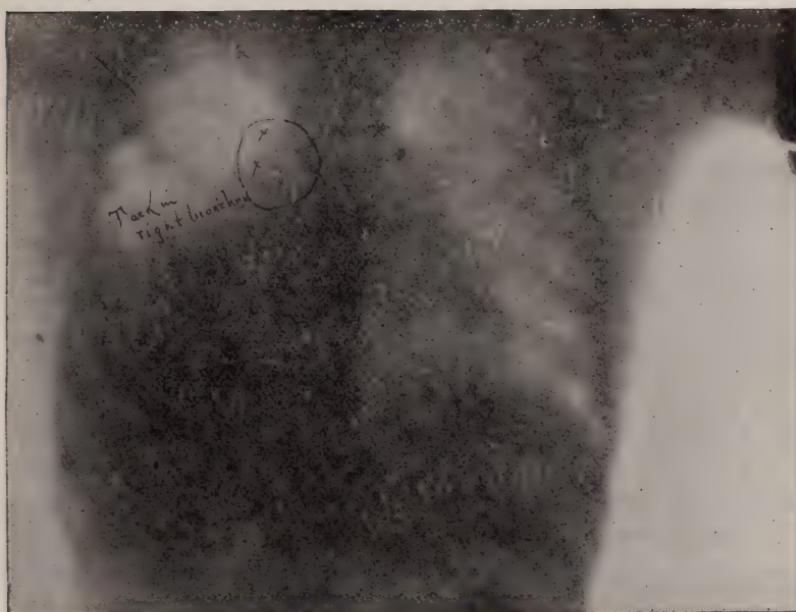
The most important feature of this case was the use of the x ray in connection therewith; and the case illustrates the utility of this agent in the field of physical diagnosis, for the certain and absolute localization of foreign bodies within the economy.

This child was said to have "swallowed" the tack, while playing, February 15th, and although a physician was called at that time, no effective measures were taken to remove the tack. After the accident the child became very hoarse, its breathing was heavy, and there was a rattling sound to be heard in its throat. These symptoms disappeared after a severe spell of coughing four days after the accident, but the paroxysm of coughing which had occurred every morning and night persisted.

March 10th the child came under Dr. Brokaw's care, and this time she was in very poor physical condition. She had a constant, but varying, elevation of temperature, and loss in weight was marked.

Brokaw made a skiagraphic examination, and took a radiogram of the child's chest. With the fluoroscope the tack was located in the right bronchus, and the accompanying cut of the radiogram will show the tack in situ.

March 15th, under a general anesthetic, a low tracheotomy was done, and an attempt made at removal of the tack; but the child became cyanotic, and the operation was abandoned for the time. The tracheal wound was left open with the idea that the tack might be expelled spontaneously; but though the severe coughing spells continued and a large amount of muco-pus was expelled, the tack remained in the bronchus. The tracheal wound closed spontaneously about six days after the operation.



March 20th, the child was again given an anesthetic, the tracheal wound re-opened, and the trachea thoroughly cocainized and swabbed out with a solution of adrenalin. A powerful electro magnet was introduced through the tracheal wound and carried down into the right bronchus in an effort to find and withdraw the tack; but though the tack was felt with the magnet, it was too firmly imbedded to be withdrawn by that means. A large endoscopic tube was then introduced into the trachea, and taking advantage of the mobility of the trachea in the patient, was carried down into the right bronchus, but upon examination with reflected light the tack could not be seen because of the accumulation of mucous in the bronchus. A pair of flexible laryngeal forceps, with an arm to seize the tack, was inserted through the endoscopic tube, and the tack was felt and grasped, but so

firmlly imbedded was it that several times the hold of the forceps was broken.

The head of the tack being larger than the lumen of the tube through which the surgeon was working, it was necessary, when at length a firm hold on the tack was secured, to withdraw the tube and the forceps simultaneously. Considerable hemorrhage followed the removal of the tack, owing to the tearing of the mucosa in pulling the tack along the passage. A tracheotomy tube was introduced and child put to bed. With the exception of a slight rise in temperature four hours after the operation, the child had no fever, and an uneventful recovery followed.

In this case the ordinary means of physical diagnosis furnished no clew as to the exact position of the tack, and in reviewing the procedures that led to its successful removal, we are impressed by the great importance of the x-ray examination, since it was from the exact knowledge furnished by this means, that the surgeon was enabled to confine his efforts to one bronchus, and to justify the persistent efforts at removal.

French Medical Literature.

Translated by A. S. BLEYER, M.D.

Inorganic Serum in Arterio-Sclerosis.

La Presse Medical, March 23, 1902, contains a note on the hypodermic administration of inorganic serum in the treatment of arterio sclerosis.

The serum is synthetically prepared to conform in identical proportions with the inorganic salts found in the blood.

Sodium Sulphate.....	0.44
Sodium Chlorid.....	4.92
Sodium Phosphate.....	0.15
Sodium Carbonate.....	0.21
Potassium Sulphate.....	0.40
Aqua Destil. q. s. ad.....	1000 00

It is therefore supposedly superior to normal saline solution in every condition where this latter is used.

The rationale of the action of inorganic serum in arterio-sclerosis is as follows:

The phosphatic salts found in the blood—though insoluble in

water, are found in solution in the blood because of the presence of sodium chlorid. The presence of this salt is absolutely indispensable for even the slightest diffusion of such phosphates in water.

Bunge, in his experiments, clearly established the importance of sodium salt as a nutrition stimulant in the growing organism, and also where any active metabolism is going on.

As we advance in life this process of metabolism proportionately diminishes and proportionately, as well, diminishes the call for sodium.

In the laboratory it has been shown that all senile tissue possesses less sodium chlorid than that of a younger animal. Less is likewise found in the blood. A normal saline solution for an old person would between 0.5 per cent and 0.6 per cent, while in a young body it is found to be 0.7 per cent.

With the advance of age there is a diminution of sodium chlorid in the blood; there is, therefore, a certain quantity of phosphates no longer capable of remaining in solution. These are precipitated out, and are deposited on the arterial walls in the form of calcareous heaps, as we find them in arterio-sclerosis.

The administration of the serum is made directly into the blood, if possible, or into the subcutaneous areolar space. Given by stomach, an important constituent—the carbonate of soda would be changed to a chlorid, and other changes might occur.

Ulcerative Endocarditis.

It is apparent from an article on this subject (*Jour. de Med. et Chir.*, February, 1902,) by Reuder, that the heart symptoms in these cases are only symptoms. The disturbances of the heart are by no means the most prominent disturbances, and the septic nature of the condition is beyond question.

Other symptoms are far more in evidence—the meningeal, abdominal, etc.; and incline the attention of the physician, frequently, away from the heart. Instance the repeated confusion in diagnosing malignant endocarditis. The rule is, that in consultation, typhoid fever, pneumonia, endocarditis, uremia and hysteria, have their partisans. The uniform and recurring syndrome of symptoms manifested in this mis-called disease, seem to plainly indicate its constant character.

It is to be hoped that its specific micro-organism will be found and that it will be given a name.

Retardation of Growth.

E. Apeart (*Ibid*), in appointing the essential anatomical lesions for retardation of growth in children, reminds us that such conditions are more often acquired than inherited. Except in a certain category of well-marked cases, such as myxedema, no stigmata or symptoms are observable, until the child has passed through several years.

The lesion which interferes with growth, and which sometimes produces an entire arrest of specific functions, is frequently located in the thyroid gland, frequently also in the heart, and frequently in the spleen, kidneys or lungs. Intoxications from paludism and alcohol play also a rôle in the sudden cessation of growth. Tuberculosis and syphilis rank high as factors in these dystrophies.

A most important lesson from his investigations is the fact, that, although these lesions and intoxications may be essential, they almost invariably produce their results through some interference with the thyroid gland.

The importance of this lies in the fact, that, as Dr. Apert claims, the administration of a preparation of thyroid gland will very often have a markedly salutary action on a dystrophy produced by a lesion elsewhere in the body; for example, in the spleen or testicle.

In prescribing mercurials for a syphilitic dystrophy, the coincident use of thyroid extract is recommended.

Determination of Phthisis Pulmonalis by Means of the Fluoroscope.

In a series of six hundred cases of pulmonary phthisis, Bounet Léon (*La Medicine Oriental*) was able to make the diagnosis in 98 per cent, simply by fluoroscopic examination.

He believes to have found in the movements of the diaphragm a source of valuable evidence in the determination of consumption.

Certain changes observed are even believed to be highly suggestive of a pretubercular stage.

The points noticed are, the asynchronism of the two lateral sections, the height of ascent, and the degree of curvature.

Some years ago Williams, of Boston, remarked the peculiar fixity of one of the halves in pneumonic inflammations.

BOOK REVIEWS.

The International Text-Book of Surgery, By American and British authors. Edited by J. Collins Warren, M.D., LL.D., professor of surgery in Harvard Medical School; surgeon to the Massachusetts General Hospital, and A. Pearce Gould, M.S., F.R.C.S., surgeon to the Middlesex Hospital; lecturer on practical surgery and teacher of operative surgery, Middlesex Hospital Medical School, etc. Volume I.—General and Operative Surgery, with 458 illustrations in the text, and 9 full-page colored plates. Price per volume, cloth, \$5.00; sheep or half morocco, \$6.00, net. W. B. Saunders & Co., Philadelphia and London.

Modern surgery is still in its transition stage ; its advance in development is so rapid; so much that is old must be rejected, in order to make room for the new, that a new work on surgery written by masters in their art, will find a cordial welcome. Then surgery almost daily invades new organs, *e.g.*, the heart; it attempts to cure medical diseases, *e.g.*, Bright's disease, hepatic cirrhosis; new operations are devised or improvements made in technic; consequently, it is advantageous to have new text-books every few years.

Volume one treats particularly of general surgery and surgical pathology. Regional surgery also finds consideration in chapters on cranial surgery, surgery of the spine, nerves, heart and blood-vessels, and lymphatic system.

Surgical bacteriology is quite extensively discussed. Some of the older works—only a few years old—were rather confusing in their descriptions of the constitutional reactions to wounds and their infections. In fact, such older terms as primary wound fever, secondary wound fever, were confused with modern terms, sapremia and septicemia. The chapter on aseptic wound fever, sapremia, etc., is very clear, and is in accord with the modern nomenclature of pathology. The diagnosis of these general disturbances receives particular attention. We are glad to see that the troublesome terms, septicemia, pyemia, and septicopyemia are all merged, with some explanation, into the one

term, septicemia. Serum therapy is discussed in connection with the treatment of tetanus. The diagnostic value of mallein in glanders is emphasized. Too brief consideration is given to the treatment of erysipelas. Surgical tuberculosis receives extensive description, and the diagnosis and treatment is up-to-date.

The technic of aseptic surgery is concise and the directions given efficient. It is claimed that salt solution is better than boric acid for irrigating mucous membranes. Bichloride of mercury is given first place in the list of antiseptics.

The articles on tumors is rather too short, many points in regard to diagnosis and pathology being omitted. The articles on fractures and dislocations are very good, and contain the descriptions of the diagnosis and treatment in a style which will win the approval of the practical surgeon.

The practitioner will find this a very satisfactory guide in his surgical practice; he can rely on it as containing all the essential features of modern developments in surgery.

International Clinics. A Quarterly. Vol. I. 12th Series. J. B. Lippincott & Co., Philadelphia. 1902.

This volume contains articles of more than ordinary interest and value on progress in various branches of the medical sciences. Also biographical sketches of Drs. Weir Mitchell and John A. Wyeth.

Under the head of Therapeutics we have: The Use of Opium in Daily Practice, by Arthur Meigs; Habitual Constipation, by J. Boas; Thyroid Poisoning, by J. M. Ward; Methods of Investigating the Action of Drugs, by H. C. Wood, Jr.; The Climate of New England, by Guy Hinsdale; Treatment of Acne, by H. Hallopeau; Practical Hints, by Henry W. Cattell.

On Medicine: The Significance of Basophilic Granules in the Red Blood-Corpuscles, with Special Reference to Their Occurrence in Lead Poisoning, by Charles E. Simon; Dilatation of the Stomach, by Alex. McPhedran; Cases of Pleurisy, with More or Less Permanent Pneumatic Indurations, Are They Tuberculous? by Robert H. Babcock; Gastro-Intestinal Intoxication, by John C. Hemmeter.

Under Surgery: Coxa Vara, by John Marnock; Ectopia Testis, by David Greig; Articles on various subjects of interest, by Bayard

Holmes, William M. Rodman and Frederick Griffith. *The Surgical Treatment of Infantile Palsy*, by James K. Young and James Kelly.

Obstetrics : The Contest between the Advocates of Symphyseotomy and The Partisans of Cesarian Section.

Diseases of the Ear : Two Articles, by Alex. Randall.

The Progress of Medicine : A Comprehensive Review, by Edward Willard Watson.

Many of the articles are handsomely illustrated, and the work as a whole compares favorably even with previous volumes of the same series.

Compend of General Pathology. By Alfred Edward Thayer, M.D., Assistant Instructor in General Pathology, Cornell Medical College; Pathologist to the City Hospital, etc. P. Blakiston's Son & Co., Philadelphia. 1902.

This book is one of the series of the publishers' quiz compends, and is a brief, but satisfactory, review of General Pathology, including pathologic and bacteriologic methods.

It is well printed and illustrated.

Quain's Dictionary of Medicine, By various writers. Third edition, largely rewritten, and revised throughout. With 14 colored plates and numerous other illustrations. Edited by H. Montague Murray, M.D., F.R.C.S., joint lecturer on medicine, Charing Cross Medical School, etc.; assisted by John Harold, M.B., B.Ch., B.A.O., demonstrator of medicine at Charing Cross Medical School, etc., and W. Cecil Basanquet, M.A., M.D., M.R.C.P., pathologist to Charing Cross Hospital. Price, \$10.00. D. Appleton & Co., New York. 1902.

The popularity of this dictionary in the past has demonstrated that there is a place for a compact dictionary on the enormous subject of the medical sciences. This volume contains 1892 pages and contains an immense amount of valuable and trustworthy information—it is a small library in itself. All practicing physicians will find this a valuable reference work.

The new edition has been brought up-to-date; articles on various diseases give the most recent ideas on pathology and treatment.

Important diseases are discussed as fully as is found in the ordinary text-book; each article is written by one of the masters of medi-

cine. Then there are hundreds of references to disorders or therapeutic procedures which can not be found elsewhere. Special symptoms and diseases receive separate consideration; it is, therefore, a work on diagnosis and treatment; it is also a text book of pathology and bacteriology. Hygiene, sanitation and preventive medicine have special articles.

The work is specially to be recommended for the young practitioner who is just commencing his practice, he will find it a great help in all his troubles; but to the older physician, also, who is so busy that he can scarcely take time to search for an article in a cyclopedia, this work will prove eminently valuable.

Transmissibility of Bovine Tuberculosis to Man.—Dr. Ravenel, bacteriologist to the State Live-Stock Sanitary Board of Pennsylvania, has added some evidence, which goes far to prove that bovine tubercle bacilli may infect the human being. From the mesenteric gland of a child, which had died of tuberculous meningitis following a primary intestinal tuberculosis, a culture of tubercle bacilli was obtained which were intensely virulent to cattle. This bacillus also exhibited other properties which correspond to the bovine type of tubercle bacilli. Gradually, evidence is accumulating tending to demonstrate the virulence of the bovine bacillus to mankind.

Glycobenphene-Heil, the new remedy for Eczema and kindred skin diseases. It is a powerful, safe, reliable, non-irritating and pleasant antiseptic, containing the same ingredients as Borobenphene-Heil with the addition of absolutely pure Oxide of Zinc, and owing to proper combination of the various chemical compounds it has greater healing powers than any other preparation. It relieves the intense itching almost instantly, and by using it freely, without friction, the most severe cases of Eczema can be cured in a short time. It is for external use only, and being a mixture and not a solution, it should always be well shaken before applying. It is an excellent dressing for wounds and heals the oldest sores within a few days. In the treatment of ulcers and abscesses it is invaluable. It can be used freely with absolute safety; in fact, it should be used freely to obtain the best results.

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ORIGINAL CONTRIBUTIONS.

Malaria: Marked Cerebral and Spinal Symptoms; Kernig's Sign Present; Double Tertian.

By JOHN T. MOORE, M.D.,

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DEMONSTRATOR OF MEDICINE, MEDICAL DEPARTMENT, UNIVERSITY
OF TEXAS.

I WISH to present to you the following case,¹ which on account of the train of nervous symptoms present, I trust, will prove of interest to you: S. K. was admitted to the Medical Ward of the John Sealy Hospital, August 14, 1900. He was 22 years of age, a native of England, and an ordinary laborer by occupation; had been at work in a lumber district in East Texas for about five weeks.

Family History.—There was nothing important in the family history.

Previous Diseases.—His previous health has been good. Says that he has never had gonorrhea or syphilis.

Reported to the University of Texas Medical Club, March 3, 1902.

¹This case was referred to in a paper on "Nephritis of Malaria," *American Medicine*, December 28, 1901, Case 4, Group II.

Present Disease.—He was taken sick August 6, 1900. On awakening in the morning of that date he felt dizzy and could not open his eyes; he felt as though his head was swinging around; he could not walk straight nor think well.

These symptoms continued in a marked degree for about three days and were still present when he was admitted to the ward, though to a lesser degree. He has had constant headache and there has been much stiffness throughout the body. On the fourth day after the attack he had a high fever, but notwithstanding this, he walked ten miles to a railway station so as to come to friends in Galveston.

He thinks he has had fever continuously ever since.

The patient states that his mind has not been clear and that he remembers very little that has taken place since he started on his journey to the railway station. He has been almost deaf and can not taste or smell since his trouble came on. There is pain, or rather a feeling of fulness over the liver, and he also has pain over the front of the chest. There has been present a slight cough most of the time. He has slept but little during the past week and complains of horrible dreams, and says that everything feels large and out of proportion.

The greater part of this history was obtained from friends and some of it has been added by the patient since his recovery.

Present Condition.—Inspection: The patient is about 5 feet 5 inches in height and weighs 120 pounds. He is rather poorly nourished, has a thick head of hair, heavy beard and a thin mustache. The face and neck are very red. Pressure on the surface produces an anemia which slowly disappears after removing the hand. The capillaries about the face are deeply injected; there are a number of pale-red, slightly elevated spots scattered over the trunk and the limbs.

The eyes are watery and have a staring look about them; he gazes for a long time at whatever object attracts his attention; the pupils are slightly dilated and the conjunctivæ are injected; the pupils react to light and accommodation.

The tongue is enlarged, thick and somewhat pointed, and is indented by the teeth.

There are pulsations in the carotids, supraclavicular fossæ and in the suprasternal notch. There is a sudaminal eruption on the red surface on the upper part of the sternum; the clav-

icles are rather prominent; the supraclavicular fossa on the right side is more depressed than on the left side.

The apex beat of the heart is seen in the fourth interspace 9 cm. to the left of the midsternal line.

There is good chest expansion, it being equal on the two sides.

The abdomen is normal in appearance; there are no scars about the legs, nor is there any roughening of the tibia. Visible pulsations in the finger nails.

Palpation: The axillary glands are enlarged—more so on the right; vocal fremitus over the front, back and sides of the chest is apparently normal; the spleen is palpable; the liver is a little enlarged, being felt a little below the costal margin; pulse full, strong, regular, and 80 beats per minute; the arteries are soft.

There is a painful spot over the right buttock about the posterior inferior spine of the ilium; the localized red discoloration at this point disappears in a short time after change in position; there is pain along the right costal margin on pressure.

Percussion: Lungs clear; area of cardiac dulness about 7 by 11 cm., showing a slight dilatation of the heart.

The liver dulness extends 10 cm. above the costal margin, the left lobe is 4 cm. to the left of midline; area of stomach tympany, undistended, 10 by 18 cm.

Patellar reflexes are diminished slightly; ankle clonus not present.

Kernig's sign well marked.

Auscultation: Small moist râles heard over apices of both lungs, they are probably more numerous on the right side; vocal resonance a little increased just below the right clavicle.

The heart sounds are normal except an accentuation of the aortic and pulmonic second sounds.

August 21st, 1900.—Marked retraction and stiffness of the neck; much difficulty in moving about in bed and the patient is disposed to lie in a fixed position. Kernig's sign is still well marked; there is distinct photophobia.

August 24th.—There is a distinct improvement of the patient; the redness about the face and neck are not so marked; he says he can not get enough to eat; he still has difficulty in

hearing, and there is absence of taste and smell. Kernig's sign has disappeared.

On the day of his admission a blood examination was made and two groups of tertian parasites were made out; the organisms found were typical tertian parasites and they were present in large numbers.

Urine: The examination of the urine on August 15th, showed no albumin present by Heller's nitric acid contact test, but by the trichlor-acetic acid there was a trace. Specific gravity, 1024.

Microscopic examination: Pale narrow hyaline and granular casts, with epithelium and leucocytes adhering to them.

A moderate amount of indican was present; there was no sugar by the Fehling test.

August 17th.—The urine was again examined and found to contain about the same elements as in the previous examination, except the amount of indican was greater and the specific gravity was 1028.

Blood examination: The blood was examined August 18th, with the following result: Hemoglobin, 90 per cent (Fleischel); white cells, 6,975; red blood-cells, 4,596,000 per cubic millimeter.

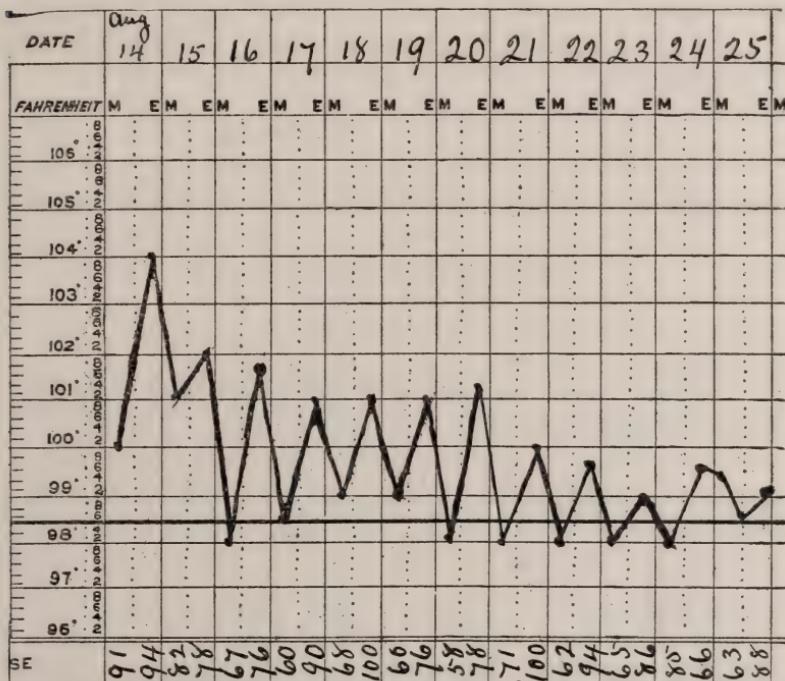
This case presents many of the symptoms of cerebro-spinal meningitis. The onset, impairment of the special senses, the fever, the slight retraction of the neck and the general stiffness of the muscles, the rash and the general appearance, all pointed to cerebrospinal fever.

This sign, which was first described in 1884 by Kernig (*Berliner Klinische Wochenschrift*, December 29), is regarded by him as present only in cerebrospinal meningitis. Others have invariably found it present in this condition. Osler regards it as very positive evidence of cerebrospinal fever.

The sign is obtained by having the patient sit on a plane surface, so that the thighs form a right angle with the trunk, and then extend the legs. It is found that the legs can not be extended in cases of cerebrospinal meningitis, owing to the resistance of the hamstring muscles. Where the patient is not able to sit up, the thighs may be flexed at right angle to the body while the patient is in a dorsal position, and then extend the legs.

I found that the legs in this case could be extended while sitting up at but little more than a right angle. This sign was

observed on August 15th, the day following his admission, and was present continuously to and including August 24th. Reference to the temperature chart will show that the sign disappeared almost synchronously with the fall of the temperature to normal.



TREATMENT.

August 14, tub-bath, one dose calomel and soda.

August 15, 15 grains of quinin in the morning in divided doses.

August 16, 10 grains of quinin in the morning, 5 grains in the evening.

August 17, 20 grains of quinin.

August 18, the same.

August 19, 10 grains of quinin.

That it was a case of double tertian malarial fever is certain. The microscopic examination revealed two groups of parasites in considerable numbers, and there was no leucocytosis.

As the parasites disappeared from the blood his symptoms of cerebrospinal involvement improved, when, by August

24th, Kernig's sign could not be obtained, though taste, smell and hearing were still impaired.

Although no spinal puncture was made, I can not but feel that this was a case of malarial fever with cerebral and spinal involvement, producing the condition necessary to give Kernig's sign.

The patient promptly recovered under the administration of quinine.

Complications in Some Cases of Tyhpoid Fever.

By FRANK HINCHEY, M.D.,

ST. LOUIS, MO.

CASE I.—Mrs. K. B., aged 36 years, mother of three children. At birth of last child, five years ago, she suffered laceration of the cervix and perineum and was confined to bed for a period of about six weeks on account of phlegmasia alba dolens of the right limb. Her general health has been fair, though never strong, and always of a nervous temperament. I saw her the first time on the fourth day of a relapse following an attack of typhoid fever of about twenty-three days duration. The primary attack had been of moderate severity, the nurse stating that her temperature had never exceeded 103°F. The relapse was supposedly due to improper feeding on the fourth day after the temperature had receded to the normal point. In the relapse the temperature rose rapidly, reaching 103°F. on the seventh day, and from that time until the eighteenth day it ranged from 102.5 to 104.5°F. Any attempt at cold sponging produced continued chilling and required the use of hot bottles to restore partial comfort. Warm sponging, gradually cooled had no effect upon the temperature, and rubbings with alcohol were not tolerated—the patient complaining of soreness of the skin. As the high temperature caused much delirium with some subsultus tendinum, recourse was had to applications of guaiacol to the abdomen; the result was apparently very beneficial, the slight perspira-

tion pleasing the patient, so that she would tolerate alcohol sponging.

The bowels, being constipated, were moved by enema every other day. There was little abdominal pain or tenderness at any time, tympanitis not marked and little difficulty experienced in feeding of plain and peptonized milk, with broths, at times.

On the twenty-fourth day she complained of severe pain in the left knee, attended by increased heat and slight swelling of the anterior surface of the joint and a rise of 1.5°F . of temperature. A 1 per cent carbolic acid hot poultice and bandage gave relief, with a light posterior splint to rest the joint. This trouble subsided in a few days.

On the twenty-sixth day she complained of chilly sensations and pain in the right thigh. The temperature again rose 2°F . and examination revealed a slight swelling of the entire limb, with slight pitting on pressure over the tibia; there was pain on pressure about the ankle, calf and along the course of the long saphenous and femoral veins, the latter being quite hard in the triangle and very painful on light pressure. She soon complained of inability to move the limb. The leg and thigh were wrapped with cotton, covered with gutta percha tissue and tightly bandaged; a posterior splint being applied to prevent any motion while she slept. The limb was elevated by placing pillows beneath.

On the third day after the onset of this thrombosis, she began to complain of sharp pains in the cardiac region, attended by much dyspnea, great anxiety and restlessness. Cardiac impulse, which had been very good through the entire relapse, now became diffuse, action was excited and feeble. The pulse rate, which had been varying from 92 to 108 during the attack of thrombosis, now ranged from 130 to 150. As attempts at feeding caused a tendency to nausea, drugs were given hypodermically—morphin, codein, strychnin and camphor in olive oil. Much relief was also afforded by a cold water bag over the heart.

The acute symptoms of the thrombosis and endocarditis gradually subsided in about ten days, though rapid and weakened heart action persisted for about five weeks from the onset. Absolute rest was maintained very well by the intelligent co-operation of the patient, and all active movement was prohibited for a month after the onset of the heart trouble.

I was told that the patient during the first attack really enjoyed the cold sponging, which was done occasionally, as the fever was not high at any time, while during the relapse the contrary was decidedly evident.

In this, as in other cases not tolerating sponging or cold packs, I was much pleased with the guaiacol applications, followed by alcohol sponging.

The trouble with the left knee I regard as a synovitis—none of the bony prominences were painful on pressure; this, with the thrombosis and endocarditis, may have been due to a large amount of typhoid bacilli in the blood rather than to secondary infection by absorption of other microbes from the intestinal lesions.

I suggested the drawing of 8 or 10 c.c. of blood for examination, but her reply was rather discouraging, a fact I much regret, as these troubles occurred on the twenty-fourth, twenty-sixth and twenty-ninth days of relapse.

Hewlett (*Medical Record*, November 30, 1901), reporting examination of blood in 24 cases, says typhoid bacilli are not found in the blood in the third week of ordinary, primary attacks, but in the majority of cases in the early course of the disease, reappearing in relapse, and Cole (*Bulletin Johns Hopkins Hospital*, July, 1901) says they are most numerous in the second week—finding the bacilli in 75 per cent of the cases examined.

The comparatively rapid subsidence of these complications may be ascribed to the fact, stated by Bollack (*Deutsch. Med. Woch.*, August 22, 1901), that typhoid bacilli have pyogenic properties of weak virulence, so that even though abscesses be formed, these abscesses are usually absorbed. On the contrary, if these lesions were due to secondary infection by absorption from the intestinal lesions, we would expect more severe troubles.

Prochaska (*Ibid.*, February 28, 1901) has observed that in such mixed infections the ordinary pyogenic germs acquire an increase of their normal virulence under the influence of the typhoid infection, hence we would expect grave results. Opposed to this belief of infection solely by the typhoid bacilli, Webster (*Jour. Am. Med. Ass'n*, February 24, 1900) asserts that periostitis and endocarditis are more often due to secondary infection.

The thrombosis occurred in the limb whose veins had

doubtless remained dilated, to a degree, since the attack of phlebitis, five years prior to the attack of typhoid fever. This dilatation, with the changes suffered by the endothelium, favored the production of the thrombus. I have observed that several text-books give, as a cause of thrombosis, "weakened heart action, with retardation of the blood-current." But so long as the endothelium is intact and the walls have not been impaired by injury or dilatation, this certainly can have no influence in the causation.

Of interest on this subject, is the report by DaCosta (*Boston Med. and Surg. Jour.*, March 23, 1899) of 14 per cent of 215 cases of typhoid fever in soldiers developing phlebitis. He attributes this to relaxation with dilatation of the veins of the leg due to marching.

CASE II.—Miss T., aged 24 years, single, domestic, small physique. Her health had always been good until about six years ago, when she had a severe attack of measles, followed by deafness in the left ear and partial deafness in the right. She was first seen July 27, 1900, when she gave a history of malaise and anorexia for a week, and severe head- and back-ache for two days. She was sent next day to the Lutheran Hospital. On admission her temperature was 103° F., heart action quite strong and regular; spleen enlarged; the entire abdomen slightly tender, more markedly so in the right lower quadrant. Widal reaction reported on the third day of admission to the hospital. Efforts to keep her temperature below 103° F. met with only fair success from the onset, though she was sponged most perseveringly and this procedure varied by cold packs. The use of a portable bathtub was not available. She bore the sponging with much discomfort and, as her illness progressed, the duration of rubbings had to be shortened on account of severe chilling and apparent distress. She had free epistaxis on the fourth and fifth days. Bowel movements were unusually frequent on the fifth day, and during the night of that day she had five hemorrhages, and, in the thirty-six hours after the first blood loss, suffered thirteen hemorrhages despite the fact that she received ten minim doses of opium at frequent intervals; in fact, as much as was regarded safe to give her, and a cold pack was constantly applied to the abdomen. At this time there was no abdominal distention. Some of the hemorrhages were of clear blood and many were surprisingly large, so the nurse stated.

After I reached her no attempt to use a bedpan was made and heat and stimulants were applied freely, with subcutaneous saline injections. This treatment restored her to consciousness and possibly prevented fatal collapse.

On the eighth day she began to complain of abdominal pain, confined principally to the umbilical region, at times rather sharp, though generally dull and steady, unless turpentine stupes were changed frequently. The history shows applications of these measures for eleven days, after which time the fever began to decline, and on the twenty-third day after admission to the hospital her temperature was normal, with well-formed stools.

There had been no delirium and she was unconscious for a short time only during the hemorrhages.

The medical treatment consisted of small doses of salol and boric acid, strychnin and brandy—the latter in small amounts. She drank freely of water and milk, the latter varied by the addition at times of lime water or some peptonizing agent. This diet was continued for ten days, during which time she improved steadily in every respect, with good pulse, varying from 76 to 88. During the night of the tenth day she was very restless, crying at times and complaining of pains in the entire abdomen. I was called early next morning and found her extremely restless, complaining of severe pain in the abdomen and having a temperature of 100° F., pulse 132. She had vomited several times before I reached her, the vomitus consisting of mucus, small amounts of milk and bile. The abdominal pain was sharp, constant and increasing in severity, so she stated. The entire right side of the abdomen was very sensitive to pressure, tympanitic and I could be certain of no point of special tenderness, for she was intensely nervous and hysterical to a degree. Respiration was hurried but there were no symptoms of collapse.

I was in doubt of the diagnosis, feeling inclined to regard it an appendiceal trouble, though the absence of demonstration of a special point of tenderness made me also fearful of a perforation following dislodgement of a slough of a slowly-granulating ulcer; still the late date for such a trouble caused me to doubt a diagnosis of perforation. While a messenger was dispatched for her relatives to confer concerning an operation, an injection of morphia gave relief temporarily—hot applications being of no avail. She slept most of the morning

and awoke free from pain. The temperature continued to rise during the day and by evening was 104° F., pulse 118, despite sponging and cold packs. Pain in the abdomen to a slight degree returned next night, tympanites continued, and she required repeated catheterization.

It is my custom in most cases of typhoid fever to inspect at least one stool daily. On the second day following the attack of great pain, three small, rather smooth gall-stones were found.

All bad symptoms continued for nine days; the high temperature resisting baths, high rectal enemata, and interrupted by several hard chills. The frequent stools were unaffected by opium and astringents locally administered. Then there was a favorable turn for three days, with temperature of 99.5 to 100.5° F., and great improvement in all respects. Then two days of almost normal temperature, with quite good pulse, comparatively, and death on the sixteenth day of relapse, forty-seventh of attack. Post-mortem was refused.

Among the points of interest to me in this case was the apparent absence of all effect of large doses of opium on the hemorrhages and bowel movements. Some writers have contended that opium should not be given on account of causing a paralyzed intestine, thus favoring tympanites and this distention tending to occurrence of continued hemorrhages. However, for the present the concensus of opinion is in favor of opium.

Another point of interest was the cause of the acute abdominal pain. I had not thought of the real cause, and were it not customary for me to judge of the intestinal digestion by inspecting the feces, I would still be in doubt, for the subsidence of the pain and the rise of temperature during the day convinced me that my diagnosis of the morning was wrong. I had come to regard it as due to an appendicitis, for though there was no rigidity of the muscles, nor tumor, nor dull area, the tympanites and general abdominal tenderness obscured a positive opinion. I made rectal digital examination and attempted vaginal examination but these measures were very unsatisfactory on account of the nervous condition of the patient, and, while the result was negative, I regarded that of no import, concerning diagnosis of appendicitis.

The cause of a relapse in this disease is always of great interest. Graham, of Toronto, in discussing the return to

solid foods, ("Sajou's Cyclopedie," Vol. VI, page 578) says: "The fact that patients frequently have relapse after taking solid food may be explained on the ground that in a certain proportion of cases typhoid fever is a relapsing disease." A statement which can scarcely be termed an "explanation." Of more interest is the finding by Chiari of large numbers of typhoid bacilli in the gall-bladder, and on this bases his belief that reinfection might be caused by emptying of the gall-bladder after a full meal and thus filling the intestine with infected fluid. West even believes any change—even from milk to broths, or semifluid diet may cause relapse, the change exciting a complete emptying of the gall-bladder.

In this case the nurses assured me the diet had not been changed. Assuming then, that the violent emptying of the gall-bladder was responsible for the relapse, the origin of the gall-stones is of interest. As stated, she declared she had never been ill except the attack of measles, six years prior to the typhoid fever illness, and I could obtain no history of severe bowel trouble, or of any infection that might induce microbic invasion of the gall-bladder. Supposing all this to be correct and accepting Naunyn's theory of microbic origin of such stones, one might assume that these stones were due to infection of the bladder by the typhoid bacillus in earlier days of the attack. In such event they must have been formed quite rapidly. However, Gilbert and Fournier (*Deutsch. Med. Woch.*, December, 1897) have obtained stones, about the size of grains of wheat, six weeks after injection of typhoid bacilli into the gall-bladders of rabbits.

The cause of death I ascribe to heart failure. I attempted intravenous injections, but she was dead before the fluid could be prepared.

Poisonous Spiders.—According to Kabut, the tarantula, which is particularly prevalent in Italy and Southern Russia, rarely gives rise to more than transitory local inflammatory trouble from its bite. On the other hand, the bite of *Latrodectus* (a genus including many small dark-colored spiders) is apt to be followed by severe general symptoms and in rare cases death.

A Case of Abdominal Sarcoma in a Boy.

By H. L. NIETERT, M.D.,

ST. LOUIS, MO.

SUPERINTENDENT OF CITY HOSPITAL.

THE tumor I wish to present to-night is a small-cell sarcoma, involving the posterior wall of the bladder, the peritoneum of the anterior abdominal parietes, the greater portion of the large and small intestines, the omentum and mesentery. You will see, on close examination, that a portion of the posterior wall of the bladder is involved, the area being about two inches in either diameter, and that over this area the tumor mass has entirely supplanted the bladder wall.

Running through the tumor, at various points, you will see the the small and large intestines, and on close inspection, it can be observed that very little of the walls of the intestines remain, they having been transformed into tumor mass. The entire tumor is soft and on palpation one can almost obtain a fluctuation wave. With such a tumor in the living, one would naturally suppose that the symptoms and signs would be very definite and pronounced, pointing conclusively toward some organic lesion of the intestines and bladder. The history, however, does not show so clearly what organs were affected.

History.—The patient was a boy, aged 5 years, white ; he came under our observation at the Hospital on March 17, 1902. He was pale and emaciated and one could see at a glance that he had been suffering for some time from some malignant trouble—such as tuberculosis, sarcoma or some chronic form of suppuration. The lady who accompanied the boy stated that he was an adopted child, and that, therefore his family history was not very well known to her. She believed, however, that there was no history of tuberculosis in his family. She stated that one year prior to entrance to the Hospital the boy received a kick in the abdomen ; he complained for a few days of pain at the site of injury, which gradually disappeared.

No medical aid was sought at that time and very little importance was attached to the injury. About one month after the injury, however, the patient came to her complaining of pain on urination. On examination the urine showed presence of what she thought was blood. This attack disappeared after a few days of rest and the child again seemed perfectly well. A second attack was experienced about six months after the injury, at which time the patient was taken to a physician, who stated that the boy had taken cold; the physician prescribed a small bottle of medicine, which relieved him completely in two days.

About two months prior to entering the Hospital it was noticed that the patient was beginning to lose flesh, the skin became pale and the boy did not seem to possess the energy that he formerly had. The loss of flesh continued in spite of the fact that his appetite was always good and digestive process perfect. After observing him for a few weeks, the patient again began to complain of pain in his abdomen and it was for the relief of this pain that he was taken to the O'Fallon Dispensary for treatment. The physicians there made a very careful examination. According to the statements of the physician who examined him, a thorough test of the urine at that time showed nothing abnormal. A tumor could be felt in the lower portion of the abdomen, the size and shape corresponding somewhat to that of a large horse-shoe kidney. The tumor was movable to some extent. The child at that time had no trouble with his bladder or bowels.

Another thorough examination was made at the Hospital, six weeks after detection of the tumor, and the various organs at this time appeared normal. A careful urinalysis showed no trace of albumin, blood or pus. Inspection of the abdomen showed a bulging of the parietes as though pushed out by a tumor. The abdominal muscles did not move with respiration over the area that was bulging. Palpation showed the presence of a large tumor in the abdomen, occupying the hypogastric, right inguinal, umbilical and a portion of the right lumbar regions. The tumor was not movable and the abdominal wall was fixed to the growth. Percussion over the tumor was absolutely flat. We had to do, therefore, with a mass in the lower portion of the abdomen, which was fixed to the abdominal parietes; and from the general indications, the trouble was such as affected greatly the vitality of the patient and in-

cated some malignancy, either a sarcoma or some form of chronic suppuration. The case was immediately considered an operable one and an exploratory laparotomy was advised. Before doing this, however, an attempt was made to diagnose the character of the tumor. From the age of the child and location of the tumor, the following diagnoses were considered:

Sarcoma of the muscles of the anterior abdominal parieties, sarcoma of the bladder, sarcoma of the bowels, sarcoma of the right kidney, appendicular abscess burrowing extra-peritoneal with adhesions, encysted tubercular abscess in omentum with adhesions.

The diagnosis of sarcoma of the muscles of the anterior abdominal wall was excluded on the ground that tumors of this kind usually grow outward and not toward the peritoneum, and also because by special effort, the muscles could be contracted nicely over the mass, obliterating completely the upper border of the tumor. The child was instructed, while lying horizontally, to raise the head and chest, causing the abdominal muscles to contract, and it was found in this way that the muscles, especially the recti, became very firm, showing that the growth was situated underneath and entirely independent from the muscles.

Tumor of the bladder was excluded, because examination of the urine showed nothing abnormal.

Tumor of the bowels was excluded on the grounds that the child never complained of obstructions nor given signs of any enteric trouble, also because the digital examination of the rectum showed this portion of the intestines to be free from any growth.

Tumor of the right kidney was excluded because of the absence of any tympanitic note in front of the tumor, also because the mass did not extend up into the region of the kidney. A very strong suspicion existed, however, that the child may have been suffering from a floating kidney, which had undergone sarcomatous degeneration and had become fixed by adhesions, in the lower portion of the abdomen. The point which made this diagnosis very plausible was the fact that six weeks prior to our examination at the Hospital, a tumor about the size of a kidney was felt in the lower portion of the abdomen. It is well known that tubercular processes frequently occur in the peritoneal cavity, which set up adhesions and be-

come encapsulated; also that appendicular abscesses may burrow extraperitoneal and present themselves in the anterior abdominal wall and, therefore, these two conditions were seriously thought of.

On March 21st, two days after entrance to the Hospital, an exploratory incision was made in the right linea semi-lunaris, which was the center and highest point of the tumor; and we found that we had to do with a sarcoma so extensive that it would not permit a removal.

Post-mortem examination was performed the following day, when the tumor, which is presented here to-night, was removed.

The Subcutaneous Use of Paraffin in Deformed Noses: Report of a Case.

By HAL FOSTER, A.B., M.D.,

KANSAS CITY, MO.

M R PRESIDENT, and Members of the Missouri State Medical Association: Roe, of Rochester, has done a great deal of original work in the correction of nasal deformities, by surgical methods. Many others have followed him by devising several ways of correcting sunken-in noses—such as follow syphilitic perichondritis, leaving a saddle-back nose.

The rhinologists meet cases of this kind who are unwilling to submit to any surgical procedure. Corning, of New York, in December, 1891, published in the *Medical Record* a paper on the use of solidifying oils by injection into the tissues for mechanical purposes.

The writer read a report of a case by this method, by Dr. Heath, of St. Paul, Minn. Dr. Gersuny, of Paris, was the first to use paraffin in saddle-back or sunken-in conditions of the nose. His articles were published in France, Germany and America. His results were very good, indeed, and his patients greatly improved in facial appearance. Dr. Scanes Spicer, of

London, recently reported a case in which he had successfully used paraffin in a saddle-back nose.

The paraffin should be sterilized, and every precaution taken to have the nose as clean as possible when the injections are made, in order that blood-poisoning may not take place. The paraffin melts at 100 to 105° F., and solidifies at about the normal temperature.

In the great number of cases now being reported, I have failed to find any case where the drug was absorbed. Some writers caution against the use of the drug, saying that an oil embolism might be supervened by its use. Dr. Meyer, of Berlin, has used the injection on animals without any bad results. In some of his cases a very mild inflammation took place before encapsulation. He also used the drug to obliterate small-pox marks. Dr. Herman Smith, of New York, in a recent issue of the *New York Medical Journal*, reports several successful cases where he had injected the paraffin.

Taking all this testimony from so many able men, I decided to try it myself. The patient, a young man, aged 19 years, from near Cowgill, Mo., was suffering from constitutional syphilis—this was the cause of the nasal deformity, and was being treated for that disease by his family physician.

While I have only used the drug in one case, it was so successful that I feel justified in reporting it. The paraffin was sterilized, and a syringe, devised by Gersuny, was used. A few drops of a 4 per cent solution of cocaine were first injected into the part of the nose where the paraffin was to be inserted. I then, on January 20, 1902, under as thorough antiseptic conditions as I could, injected one teaspoonful of melted paraffin into the depression of the nose. It was rapidly moulded with the fingers and very soon became settled, and the appearance was greatly improved.

There was no pain during the operation. Ice may be applied to the nose for several hours after the operation to prevent inflammation.

I think there will be little danger of the drug doing any harm if rapid pressure is used immediately after the injection is made. Dr. Gersuny says several of his cases, six months later, had typhoid fever, but the high temperature had no effect on the paraffin, it remaining in perfect apposition.

It is my opinion, that this treatment carefully used, will be of great assistance to the rhinologists in correcting the

many unsightly deformed noses which he meets, and by so doing he will add greatly to the facial appearance of his patients.

A Case of Epilepsy.

By E. C. RUNGE, M.D.,

ST. LOUIS, MO.,

SUPERINTENDENT OF THE INSANE ASYLUM.

THE patient, G. H., aged 51 years, native of Pennsylvania, white, married, carpenter, was admitted to our Hospital on three different occasions, to-wit: First admission on July 10, 1899; he was discharged on September 10, 1899. Second admission on December 2, 1899; discharged on Septer 21, 1900. Third admission October 10, 1901.

Family History.—Nothing known beyond parents. His father was a farmer, non-alcoholic, and died at the age of 60 years, of pneumonia; mother was of a neurotic temperament, had crying spells all her life without apparent cause, and was never able to stand any nervous strain or excitement. She spent eight years of her life in an insane hospital, after which her memory and power of comprehension remained highly defective; she died at the age of 60 years, asthma of long standing being assigned as the cause. One of her brothers was insane, and so were two of our patient's cousins, children of two sisters of the patient's father. The patient was one of six children, three boys and three girls. The eldest sister died at the age of 43 years, having been subject to epilepsy through her entire life. The two remaining sisters are alive; one of them has had severe epileptic attacks since early childhood, during which she had sustained severe injuries, *i.e.*, fractures of the long bones. The other sister was always delicate and is said to have been afflicted with "spasms." The two brothers are described as not strong but apparently normal.

Patient's History.—Nothing elicited about childhood and youth except that he was afflicted with "fits" when small,

which gradually disappeared. A few years ago the patient began to have so-called "fainting spells" and attacks of sudden vertigo, during which he suffered several injuries; six years ago he fell off the roof and had three ribs broken; four years ago he was run over, the horse stepping on his head, which accident resulted in a scalp wound; he has had several falls from scaffolding, on one occasion sustaining a fracture of the right ulna, which was discovered by us at the time of his first admission. The anamnesis further shows that the patient has been for the past fifteen years of a "nervous" disposition and at times of an irritable nature.

The first trouble or uneasiness he caused the family is dated back to the summer of 1898, when he manifested symptoms similar to the ones of the attack which necessitated his confinement at our institution in 1899. The patient's wife stated that he developed delusions of persecution, accusing his immediate family of attempts to get rid of him; he would sit up all night, refusing flatly to go to bed; he would encourage his wife to laziness, saying that it was not necessary to clean the house; he repeatedly claimed to have seen his wife's parents although they lived far away in the country. His memory has been failing; says that he has saved a large sum of money, which is not true; has threatened to leave his home and has also threatened his wife's life. The patient has received a common school education, and was raised a Methodist. He has been chewing tobacco moderately and drinking some beer and whisky.

Physical Examination did not reveal at any time any striking features. There was no evidence of any visceral lesions or of luetic disease. The patient's state of nutrition was fairly good except for a slight anemia which rapidly improved after proper treatment. Among nervous phenomena we did not find iridoplegia, rhombergism, abnormality of deep and superficial reflexes nor any sensory disturbances. When admitted the patient manifested a great deal of tremor of a coarse nature, which to a great extent disappeared after a few weeks of rest and the employment of a sedative. He has an impediment of speech, which is congenital.

While with us the patient is quiet and orderly, at times somewhat depressed and absentminded. He sleeps and eats well. After a short stay at the hospital the patient regains his equilibrium readily, and very soon renders himself generally

useful about the ward. His knowledge of the epileptic attacks in his earlier life are based entirely on hearsay. The "sinking spells" are often preceded and followed by severe, mainly occipital headaches. A general tremulousness acts at times as an aura, lasting long enough to save himself from a fall. On some occasions his nervousness is replaced by an attack of vertigo. Most of his spells the patient describes as complete lapses of consciousness; others are characterized by auditory and visual hallucinations of a purely euphoric nature, utterly lacking in elements of self-depreciation and depreciation of others, so common in this kind of psychic phenomena. He depicts the hallucinations as momentary revivals of past and actual experiences, and claims that he retains the memory pictures after the spells have passed. More like beautiful dreams pass incidents of his life before him, embellished and pleasantly colored by his morbid fancy. Pleasant, happy chats with his wife, children, employer and others, make their appeal to his subliminal self. Pictures of landscapes, street scenes, churches, flit by and are recognized as idealized reproductions of actuality. Everything seems impregnated with a spirit of euphoria, and makes the patient feel that life amidst such environment would be truly full of happiness.

The patient states that the spells recurred most frequently while he was working at his trade at a tobacco factory, which circumstance he attributes mainly to nicotinism caused by absorption through contact and inhalation. The work there made him very nervous, particularly in the morning. He learned to combat this nervousness by taking some whisky, the dose of which he had to increase gradually. He admits that the whisky was but of temporary relief, and actually made the spells occur more frequently.

In conclusion of this history, I will say that our patient, after a short sojourn at the hospital has no attacks of petit mal during the remainder of his stay.

New Chief Surgeon to St. John's Hospital.—Dr. A. V. L. Brokaw has been appointed Chief Surgeon to St. John's Hospital and Dispensary in place of Dr. T. F. Prewitt, who has resigned. He was also elected to the position of Professor of Clinical Surgery in the Washington University, Medical Department.

Workings of Medical Law.

By G. F. JOHNSTON, M.D.,

LAKIN, KANSAS,

PRESIDENT KANSAS STATE BOARD OF MEDICAL REGISTRATION AND EXAMINATION; MEMBER OF THE KANSAS MEDICAL SOCIETY, THE AMERICAN MEDICAL ASSOCIATION, ETC.

MEDICAL registration is part and parcel of the methods and machinery of civilization. It has a very ancient history. According to Aristotle the old Egyptians had a species of registration by which, besides the protection of society from the ravages and outrages of quacks and frauds, they provided that "doctors should not demand fees on a foreign journey or on military service, when such patients were treated free of expense, and the poor were treated gratis," by reason of the doctor being registered and carried on the public pay-rolls.

In the time of Hippocrates physicians were registered and the registration embraced a far more stately and formal ceremony than does any modern registration, notwithstanding our Kansas registration is sometimes bitterly complained of as being bound round with far too much red tape. Each registered physician in Hippocrates' time had to take and subscribe to the celebrated Hippocratic oath—a thing some modern doctors might do with advantage.

All of ancient, medieval and modern medicine, when studied in the light of history, shows some form of registration, though as variant and variable as March winds; but in all their various forms there was exhibited little or nothing of the most modern ideas and purposes of registration. Then registration was only intended to establish an official guild as adjunct of government, confined to a favored few; now it is intended to establish a broad and universal standard of qualification for all practitioners, and to protect the lives and health of the entire body of citizenship.

There is now a general and widespread movement in all civilized countries to execute the first duty of government, namely, to protect life and health in the citizen, in return for the surrender of the citizen's inalienable right to life and health to the keeping and care of government. In all civilizations

the individual must surrender many of his personal rights to the care of government, which in return guarantees him protection of life, health and property; that is the clear and manifest duty and obligation of all governments. In the monarchy the sovereign feels bound to protect the citizen so that he may have as many sound and serviceable soldiers as possible to support and protect the throne and crown, and in the republic that the state may have not only soldiers but useful citizens for service in the industrial world, and to escape the governmental burden of taking care of the helpless—the invalid and the pauper.

The quacks and medical mountebanks in all ages have raised a loud clamor against all methods of registration with qualification attachments, on the ground of taking away the personal liberty and the so called vested rights of the unqualified. In our own State registration the whole body of complaint has been made by the unqualified; they have protested loud and long, both personally and by paid attorneys against the restriction of their liberty to do as they pleased and be employed by whomsoever might choose to do so, basing their spurious arguments on the ground that a vested right was being taken away, which could not be done constitutionally. It is wonderful how glibly and eloquently they cite the Declaration of Independence as a guarantee of "life, liberty and the pursuit of happiness," holding liberty to mean license, and happiness to mean a permit to prey on the ignorant and unsuspecting citizen. Such arguments only need a moment's consideration to show how spurious and specious they are, for, the first and supreme *duty* of government is to protect its citizens in everything that goes to constitute the general welfare of society; and the duty of government is as great in the matter of protecting the citizens against all health-destroying agencies as against murder, theft and arson; and that protection lies largely in instituting such a medical and sanitary régime as shall give the individual the benefit of all science, all art, all wisdom, in the betterment of all the conditions of life and health.

The citizen has as much need of quarantine against ignorance and quackery in medical practice as he has against all forms of contagion.

As Kansas was one of the very last states in the Union to establish anything like an adequate system of medical regis-

tration, it has found itself confronted by a very anomalous and serious condition of things. As the registration laws of other states increased in number and set up increasingly higher standards of qualifications, the illiterate and incompetent contingent in the profession drifted from compulsion away from the states requiring high standards of qualification and, like a spring flood, inundated the few remaining states where lax laws, or no laws, afforded them an opportunity to still subsist as parasites on the political entity called society. And when Kansas opened its eyes on the 22d of March, 1901, with a respectable medical registration law among its statutes it found the State overrun with the medical remainder from nearly all other states. It had become, almost unawares, the dumping-ground for the professional refuse from nearly every state and country on the planet. We had not only our own quota of educated and reputable physicians, but we had everybody else's quota of disreputable and disqualified mortals calling themselves physicians. And the task which the law set before the new Registration Board was one of the most arduous and trying tasks ever laid on such a body of men. Above all things, that Board felt in duty bound to do justice to all men seeking a license at its hands, as well as the community in which they sought to practice. And since there was left practically no other state for the incompetents to flee to, their migrations were at an end, and they mostly stood their ground for a last battle with organized society—the battle for subsistence. That battle began when the Legislature assembled, it was continued throughout the session and carried into the executive chamber of the capitol, and renewed in force before the Board.

That battle was waged so vigorously in the Legislature that only a compromise bill could be passed, one which would substantially recognize and leave in the field unmolested, a large contingent of illiterate and unqualified practitioners. If they had succeeded in palming themselves off on the public as "doctors" for seven years, they were allowed to remain in practice, no matter how ignorant and unlettered they might be, no matter if they could by no possibility obtain a license to teach the alphabet and spelling-book in our country schools, they still could obtain a license to practice the loftiest and most sacred calling among men; and the one naturally requir-

ing the highest degree of erudition and wisdom known to the human race.

The result was that over a quarter of a thousand licenses had by law to be granted to men who had never entered a medical school for an hour's study. How many men and women think you would be licensed by the State to teach even the lowest branches of study in our common schools, who had never spent an hour in school? Under the law, men applied for license to practice medicine who actually could not read or write, could not sign their names to their applications, could not tell when and where they were born, could not spell the name of the nearest postoffice or the county in which they wanted to practice what the world calls a learned profession. The Board has to deal with "all sorts and conditions of men," from the class just mentioned up to the most erudite university graduates. We have had not only the densely ignorant but the desperately dogmatic and malevolent kinds of men to deal with; also cunning, crafty, unscrupulous and downright dishonest characters. And we have also had a large contingent of highminded, well-educated and honorable men as applicants. We have had the cautious and the careless; men who looked to it scrupulously that every detail of the legal requirements for registration were complied with, and men who never yet have furnished acceptable credentials. Some have been many months in getting their papers in such form that the Board could take legal cognizance of them; and some now, after more than a year, are still without a license for want of perfected applications, while others refused to perfect their applications, and were rejected on that ground.

Many shrewd incompetents, as fast as they were rejected, reapplied for registration, making more or less considerable modifications in their claims for recognition. Bribes have been freely offered for unmerited licenses, while others have resorted to threats and storms of abuse when their demands were not granted. Lawyers by the score have been sent up to persuade or bully the Board, according to the temper or whim of the rejectees. And when one of these doctors was put in jail for practicing without a license, he appealed to the Supreme Court, as was his right, but that court recently rendered its judgment sustaining the constitutionality of the law.

As the law stands it is one of the best in the United

States. Its standard of requirement is as high as that of almost any state in the Union. It allows the registration of only four year graduates or examiners who have taken four courses of medical instruction, the Board having authority to make the examinations as thorough and rigid as equity and good conscience will allow. And when the old crop of ignorant and incompetent practitioners dies off or moves away, Kansas will be one of the best regulated states in the Union, and it is a consolation to know that their disappearance is already perceptible. The older ones are dying off, the younger, finding the field uncongenial, are moving into new fields hoping to better their condition and prospects.

The paramount subject that is now engrossing the attention of the registration boards all over the country is that of *uniformity and reciprocity* in registration; for, as soon as uniformity of qualification can be achieved it will be easy to establish a general reciprocity of all the states and territories. That day seems to be not far distant. There is already a movement on foot and far advanced in the direction of uniform standards.

On the 17th of last January, representatives of the Wisconsin, Michigan, Illinois and Indiana State Boards met in Chicago and effected a permanent organization called "The Confederation of Members of Reciprocating State Medical Examining and Licensing Boards." This organization has issued invitations to all other state boards to unite with them in a general conference at Chicago, in May, for the purpose of formulating a general plan of united action in securing uniformity in the requirements for registration, to the end that he or she who holds a license from one state may be registered in any other state on the one license, which will constitute a very desirable basis of state reciprocity.

When a majority of the states adopt such a plan it will not be long until all the states will be forced to adopt the same plan and standards. When that is accomplished the next great reform will force its way into the medical colleges, for no college can long hold out against the requirements of such a combination of registration requirements; they will not be able to get students who know they can not be licensed after taking inferior degrees in inferior colleges.

The last step in the march of progress, it is hoped, will be governmental supervision of all medical colleges to the extent,

at least, of compelling uniform standards of education; then we may safely abandon state board supervision, for the diploma of any college will be satisfactory evidence of qualification anywhere in the Union. A National Board will then sit in judgement on the college and none will be permitted to graduate inferior students. That, it seems to me, is the direction and goal of all the now inharmonious, conflicting and unsatisfactory efforts at establishing interstate and international uniformity in medical qualifications.

If the United States comes to that most desirable status, foreign nations who look to us for light and reciprocal relations will not be long in following our example. We can and should lead the world in this battle, as we do in many others. We are wedded to a good cause. We are in the parturient state, and it is practically impossible for a good cause to suffer miscarriage.

It is only a little over fifty years since the first step was taken in this country toward a high and uniform standard of medical education. In May, 1846, the first National Medical Convention in the United States was held in New York, and at that meeting this resolution was adopted:

Resolved That it is desirable that a uniform and elevated standard of requirements for the degree of Doctor of Medicine should be adopted by all the medical schools in the United States, and that a committee of seven be appointed to report on this subject at a meeting to be held in Philadelphia, in May, 1847.

From that day of no standards to the present time the work has gone steadily on with varying degrees of success until now we have registration laws in fifty-four states, territories and dependencies of the United States, with a large percentage of practical uniformity in the standards of requirements. Wherever our flag floats, there we have at least a fair form of medical registration and an honorable attempt at ideal standards of requirements. Hence, the unification of methods and standards can not be long delayed. In fifty years more there will be little, if anything, left to be engrafted on our system. That seems, perhaps, a long time to wait for a medical millenium, but other great movements of civilization and civic reforms have taken a much longer period. We can afford to work and wait in so good a cause.

Necropsy in Heart Disease.

By LOUIS RASSIEUR, M.D.,

ST. LOUIS, MO.,

ASSISTANT SUPERINTENDENT ST. LOUIS CITY HOSPITAL.

ON the evening of February 6, 1902, Dr. Louis Behrens and myself presented patients with signs of disease of the various valves of the left side of the heart. (*COURIER OF MEDICINE*, May, 1902, page 338). Since then two of the patients have died and I was successful in getting a post-mortem examination on both cases.

To those who were present at that meeting I will endeavor to recall the first case: It was Irishman, small in stature; his chest was very kyphotic; the least exertion caused extreme dyspnea and exaggeration of the systolic bruit, which was heard best at the junction of the second right rib with the sternum, and was also transmitted along the great vessels of the neck. On inspection, the apex beat was not seen and was barely felt, on account of the emphysema. Cardiac dulness extended above, to the fourth rib; to the left, 1 cm. internal and parallel to the left papillary line; to the right, to the right sternal border below, continuous with the hepatic dulness. The pulse was small, regular, compressible and of a frequency of 80 beats per minute.

Excerpts from protocol are as follows:

The patient died March 15, 1902, at 8:30 a.m. I will not enter into a description of the body. The grand incision revealed the following: The color of the hollow viscera was a pinkish-gray; the omentum was retracted; appendix was in normal position; stomach was not visible; liver extended to the umbilicus; diaphragm position was sixth rib on both sides; the peritoneal cavity contained 30 c.c. of a clear straw-colored fluid; lungs did not approximate by 3 cm.; both pleural cavities were filled with a straw-colored liquid; left lung retained its luster, marginal emphysema was present, a few nodules at the apex, slight edema of the lower lobe; right lung repeats the left; spleen capsule was wrinkled and thickened, follicles and

trabeculae well seen; color of the cut section was a deep red, substance was firm. Diameters were $11 \times 8 \times 3.5$ cm.

Left kidney, diameters were $10 \times 5 \times 3$ cm., cortical markings were indistinct, pyramids were almost entirely obliterated, surface was irregular. Right kidney was slightly larger than the left and simulated the left except that the process had not advanced as far as in the left.

Liver, the diameters were $21 \times 7 \times 7$ cm., capsule was rough, surface of liver showed three costal depressions; on section there are signs of central atrophy and fatty infiltration.

The heart: Right ventricle contained fluid blood and post-mortem clot, right auricle contained the same: left ventricle and left auricle contained the same as the right side of the heart. Apex was formed by left ventricle. The heart is larger than that of the first patient, mitral orifice admits three fingers, tricuspid orifice admits four fingers. Consistency of the heart muscle was fair, pulmonary valve was intact, aortic valve segments show calcareous deposits which contracted the orifice so as to admit one finger tip. Beginning aorta was covered with atheromatous patches. The pericardium shows thickened areas.

The patient had edema of the lower extremities.

Resolutions on the Death of Dr. M. D. Schmalhorst.

The following preamble and resolutions were adopted by the St. Louis Medical Society:

WHEREAS, The community has lost a respected citizen and the medical profession a genial, cultured, scientific and conservative physician, and the Society an honored and valuable member, be it therefore

Resolved, That we deeply and profoundly deplore the untimely death of one who gave such unmistakable evidence of his great usefulness, not only to his clientele but to the profession which has been honored by his membership, and that our sincere sympathy be extended to his wife and family in their bereavement, and that a copy of these resolutions be forwarded to them, and spread upon the minutes of the records. Be it further

Resolved, That a copy be sent to the local journals.

R. H. FUNKHOUSER, F. M. RUMBOLD, J. M. BALL, Committee.

LEADING ARTICLES.

A CASE OF HYSTERIC PAIN IN THE MASTOID PROCESS.

By LEO CAPLAN, M.D., St. Louis.

Dr. George Gellé relates the following most interesting case:—The patient, aged 18 years, experienced in her 14th year a violent shock caused on one side by the sudden death of her mother and on the other side by the brutal attack on her brother by her drunken father. Three weeks afterwards there appeared violent pain in the region of the right ear and right mastoid, which she ascribed to a cold contracted by her tramping for two days in fields, being in mortal fear of her father.

For four years the girl suffered intense pain, when she finally took courage to consult the house physician of her mistress. He referred her to an ear hospital, where mastoiditis was diagnosed, and trephining made with negative result. For fourteen days she was free of pain, but before the wound closed (in the third week) the former excruciating pain appeared again and the girl begged the writer to relieve her at any cost from her suffering.

Examination showed the external meatus normal, no secretion, dura membrane visible, not reddened and somewhat thickened. The most striking feature during the examination was the intense painfulness of the ear region; the patient already showed fear at the approach of the speculum, and the slightest contact of the cotton bearer with the posterior wall of the canal produced cramp-like contortion of the neck to the right and shouts of pain. The scar from the operation was of abnormal sensitiveness and the slightest passing of the cotton bearer over the surface of the mastoid caused intense pain all over the right side of the neck and spasmodic cramps of the muscles of the neck, similar to the *torticollis ab auris lesa*.

The three points of greatest painfulness in true mastoiditis (the base, apex and posterior margin of the mastoid) in this case were not

more painful than the rest of the surface, and hard pressure was not more painful than the gentlest touch. The area of subjective pain was confined to the mastoid process only. The *regio preauricularis* and concha were sensitive, but especially hyperesthetic points were to be found in the cartilaginous part of the meatus, the helix and concha.

The palpation of the left mastoid carried out for the sake of comparison, produced a spasmodic cramp of the neck to the left, but the pain was slight.

In the pharynx a hyperesthetic zone on the right anterior arch, right tonsil and on the right half of the velum; the posterior wall of the pharynx analgesic.

No edema, no redness, no deformity in the right mastoid region, no fever; normal expression of the face, well-nourished body and clear tongue.

The hearing test was very difficult; the patient was excited and gave unsatisfactory answers to the questions; she seemingly did not perceive the low tuning-fork (*la_s*), but she hears perfectly conversational voice on both ears.

There were still other hyperesthetic points, among them the clou hysterique on the parietal and the other along the spinal column. Besides there are several spasmogenic points. Dr. Janet, neurologist at the Salpêtrière, made the diagnosis hysteria, and, therefore, the diagnosis of this case was hysterical pain of the mastoid without any lesion of the middle ear.

The writer prescribed carbol-glycerin and told the patient that she would recover entirely under the treatment of the neurologist. Already, after two weeks, there was a marked diminution of the painfulness over the right mastoid and right ear. Any doubt about the hysterical nature of this case was set at rest by the declaration of the patient that she suddenly became deaf in the right ear. When the patient was told to close the left ear, she did not hear any orders and remained motionless; this time the tuning-fork was perceived and with the well ear only; but when told to close the left, well, ear with her finger, the patient stated that she did not perceive the tuning fork.

The treatment remained the same, the patient was told that she was getting better, whereupon she suddenly assured the writer that she was feeling considerably improved.

The writer mentions a case of Liaras, where the diagnosis of hysterical painfulness of the mastoid was rendered very easy on account of the sudden change of the seat of the pain during the transfer of the patient to the hospital; leaving her home with the pain in the left mastoid, she arrived at the hospital with the pain in the right mastoid.

Formerly such cases were diagnosed as neuralgia, especially when there was no affection of the middle ear. If there was an otitis media these pains were taken as symptoms of acute mastoiditis. We know that otitis media does not exclude hysterical pain and both may occur simultaneously and independent of each other. We should always think of hysteria when we meet with such cases of sudden, highly intense, lasting and superficial pains over the mastoid. The differential diagnosis between this affection and true mastoiditis is facilitated by the absence of the three typical points: Douloureux of the true mastoiditis and by the fact that the slightest touch causes the severest pain, while the bone is not sensitive. The spasmodic cramps of the muscles of the neck could be confounded with torticollis *ab auris lesa*, but there is no *auris lesa*. Of what importance a correct differential diagnosis in such cases is, is shown by the results of the surgical operation in the case of the writer.—Translated from *Arch. Internat. de Laryng.*, January, 1902.

TYPHOID INFECTION BY INHALATION.

The mode of entrance of any pathogenic micro organism into the body deserves careful investigation, since upon a knowledge of this process some of our most effective prophylactic measures are based. Sometimes one mode is adopted as the most common, while other modes of equal importance are entirely overlooked.

At times the mode of entrance accepted may be entirely erroneous; the formerly-accepted notion that malaria is caused by the inhalation of marsh-miasms, or that yellow fever is carried by fomites are familiar examples.

In general, the medium by which a germ is carried has served as the foundation for a division of pathogenic germs into several classes; thus we speak of a disease as air-borne, water-borne, food-borne, etc.

Now, typhoid fever was regarded by Murchison and others, both

air-borne and water-borne. It was supposed that emanations from decomposing feces, or feces from a patient ill with typhoid fever, may transmit the disease, and much evidence was collected in support of this mode of infection.

When it was discovered that the disease was due to a bacillus which leaves the sick body by means of the feces and urine, the theories that sewer-gas or imponderable emanations from the feces may transmit the germ was dropped to a great extent. Few authorities referred to this mode of transmission, and wrote of typhoid fever as a disease almost exclusively water-borne.

Lately, the proposition that typhoid fever is invariably water borne has been attacked from several sides. It was suggested that the dried feces ground into dust may serve to transmit the disease. But Germano demonstrated that the typhoid bacillus lives only a very short time when dried, and in the dust of the air it promptly dies; so that the transmission through dust and subsequent inhalation must be a very rare mode of infection.

Quill (*British Medical Journal*) gives an account of an epidemic among the Boer prisoners in Ceylon. He traced the infection to an adjoining camp, which was either carried through the air or by insects—such as flies. All other modes of infection were excluded.

But admitting all his evidence, it can not be said that the disease was air-borne, inasmuch as he admits that flies continually flew between the camps. This was the factor which Murchison overlooked in establishing his pythogenic theory: Namely, that the poison may be carried by insects and need not necessarily accompany the odoriferous emanations.

Some evidence that the disease germs enter the respiratory tract has been derived from clinical and pathological studies. It is well known that a sore throat, pharyngitis and tonsillitis, or at least an intense congestion of the fauces is a very common premonitory symptom of this disease. May not the germ be inhaled, grow in the throat, like influenza, and then being swallowed set up the intestinal symptoms? Again, a cough almost always is present in the disease.

Wasdin (*American Medicine*, 1902) believes that the disease primarily is an infection of the respiratory tract. He bases this belief on the fact that bacilli are not found in the stool or in the blood during the first week of the disease.

Finally, Jehle demonstrated the typhoid bacilli in the bronchial secretion of many patients dead from typhoid.

If it can be definitely shown that the primary colony of Eberth's bacillus is in the respiratory tract, this would be strong corroborative evidence that the disease is air-borne.

But too many facts are known which militate against this view. If the bacillus is located in the respiratory tract, some micro-organisms would be ejected during the act of coughing, and the disease would be as contagious as ordinary bronchitis. Then it should be more prevalent in winter, when the non-ventilated rooms favor the transmission of the germ through the air. But this is not the case, the disease is most prevalent during the season which favors its growth and transmission by food, water and insects.

NERVOUS PHENOMENA IN TETANY.

Osler insists that that the mild carpopedal spasm seen in rickety children should be distinguished from the severer affection to which tetany is properly applied; but most observers will classify even the milder cases under the general term *tetany*, since one or more of the characteristics nervous phenomena are found associated with a tonic spasm of one or more extremities. The disease in infancy is not often diagnosticated, as it is generally confused with ordinary eclampsia. A non-febrile "spasm" in infancy should be suspected as an attack of tetany.

In adults the disorder occurs under several conditions: In epidemics, debility following lactation and chronic diarrhea, dilatation of the stomach, and removal of the thyroid gland. In all cases there exists a great increase in the excitability and irritability of the nerves. Different nerves may be affected in a different degree; but this irritability when demonstrable constitutes valuable evidence in making the diagnosis.

Trousseau's symptom: Pressure on the nerve trunks or blood-vessels of the affected limb, so that the circulation is impeded, will induce the characteristic contraction.

Chvostek's symptom: This is an increased irritability of the facial nerve. A slight tap along the course of the nerve causes twitch-

ings in some of the muscles to which it is distributed, most commonly the corrugator supercillii.

Erb's phenomenon: The electrical irritation of the motor nerves is greatly increased.

Hofmann's sign: In most cases there is a heightened excitability of the sensory nerves, a slight pressure on the nerve induces paresthesia in the region of distribution.

Morse regards a spontaneous intermittent contraction of the muscles of the forearm as the most characteristic symptom.

The reflexes are said to be normal. In the case of tetany in an infant the writer found ankle clonus well marked.

The phrenic phenomenon—Salovieff's sign: This author reported a typical case of tetany in which the patient complained of palpitation, and on inspection it was noticed that the intercostal spaces on the left side of the lower part of the chest were forcibly drawn in at each beat, while the lower ribs were lifted and the epigastrium pulsated. On auscultation, there was a slight bruit transmitted to the left, and inspiratory in character.—(*New Medical Journal*). On examination with the x rays it was found that these peculiar contractions deepened upon contractile movements of the diaphragm, the left half of which contracted with each heart beat.

THE FOOD VALUE OF SKIM-MILK.

On account of the common practice of diluting whole milk with skim-milk among the dairy, or even selling skim-milk as pure milk, there has arisen an unfortunate tendency in the municipal supervision of milk to discourage its sale, by imposing certain restrictions which make it unprofitable to dealers. Thousands and thousands of gallons of skim-milk are fed to hogs and calves or thrown away simply because it can not be sold. Only the ignorant could maintain that it is worthless; and the separator milk, though almost fat-free has a high nutritive value. It has been abundantly shown that this skim milk is just as digestible as whole milk (see "Bulletin 77, Maryland Agricultural Experiment Station.")

Skim-milk, in the first place, is a source of proteids which probably are more valuable than the proteids of meat, and in this form is much cheaper. The ordinary round steak has, on an average, a pro-

teid percentage of 14. Skim-milk has a proteid percentage of 3.6. One pound of steak costs 10 cents—often more, while skim-milk may be readily obtained at 15 cents a gallon. By simple calculation it will be seen that four and a half pints of skim-milk equals one pound of steak, which cost only about 8 cents. The calorie value of the fat in the meat is practically counterbalanced by the milk-sugar.

Then it must be remembered that milk proteids are among the most wholesome, even in diseased conditions. Purin bodies are practically absent in milk.

It is, therefore, wise for physicians and legislators to encourage the sale of skim-milk, particularly among the poor; provided, however, that rules and regulations as to its purity and freedom from bacterial contamination be formulated and embodied in appropriate legislation.

It should also be remembered that skim-milk, at present, means almost fat-free—separator milk; but this should in no way serve as a valid objection to its use; in fact, if the sediment be removed in the separator it should be cleaner and more wholesome than hand-skimmed milk.

EDITORIAL COMMENT.

The Practice of Substitution.

Even the enactment of stringent laws does not seem to check the evil of substitution. The human element of greed is intimately connected with it; a druggist, in order to save a few cents, will substitute a different and impure article; or he concocts a mixture which some formulary gives as the exact ingredients of the preparation prescribed. Perhaps, few physicians have a correct conception of the prevalence of this practice. As in the commercial world, efforts at cheapening products result in adulteration and substitution, so certain unscrupulous druggists, in order to gain a little more, will adulterate or substitute one preparation for another.

This practice is not limited merely to the retail druggists but it is found also in the wholesale dealer, or even manufacturer of pharmaceutical preparations. No sooner is a valuable medicine on the market that hosts of imitations are offered. The more valuable the drug, the more often is substitution practiced.

The Evils of Substitution.

The evil results of this nefarious practice are obvious from a brief consideration of the subject. In the first place, the substitute is usually inferior in therapeutic value and the clinical results are less perfect. A certain chemist may have expended much thought and labor, or a pharmaceutical company made numerous and costly tests in order to make a certain preparation valuable, the substitution of inferior products vitiates the results obtained by the original careful experiments, and hence, obscures and contradicts the scientific advance in therapeutics.

There can be no question that responsible manufacturing pharmacists, having much capital back of them, are enabled to prepare chemically valuable combinations and, subsequently, to make elaborate experiments, and thus add enormously to the progress of scientific medication. The medical profession require that the formulæ of the product be published, but this does not include the whole process in preparation. There is still the original selection of drugs upon which the activity of the compound depends; hence, the imitation may be prepared with the same constituents and yet be very inferior in value.

This practice of substitution can do harm in that it will deter manufacturing chemists from publishing formulæ of their products.

It is seen that the evil arises in many ways: First, it may be to the patient in that an expected physiological effect is not realized; second, it throws discredit and unreliability on a reliable medicine; third, it hampers the progress of therapeutics; fourth, it will result in a withdrawal of published formulæ by the manufacturer; fifth, it fosters quackery and dishonesty, and lastly, it jeopardizes the reputation of the physician.

The Attitude of the Profession Toward Substitutors.

Let it be generally known that physicians will tenaciously adhere to their rights, in that they must know the origin, strength, preparation and physiological action of their remedies; hence they oppose all sorts of secret remedies. They still have the right to supervise the various steps in the preparation of their drugs, and if a certain individual who prepares or sells the remedy is dishonest he has a right to

discharge him, that is, see that the drug wanted does not pass through his hands.

As so many dealers, under the pressure of intense competition, will yield to the temptation of dishonesty, the physician is compelled, more or less, to choose his druggist. When the druggist is not known to him he must choose the manufacturing chemists, hence the justice of specifying a preparation made by a particular firm. If the pharmacists substitutes one for the other he is wilfully, and should be criminally, performing an act which the profession at large can condemn in the strongest terms only.

It should be the invariable rule to withdraw all your patronage at once from any druggist who is known to substitute. Warn your patients not to buy their drugs there.

The Remedy for Substitution.

This lies principally in the hands of the practicing physician. If a certain druggist is known to be scrupulously honest, the prescriptions should be sent to him if at all convenient. We are glad to see this practice is carried out to some extent. On the other hand, a pharmacist who wilfully substitutes one preparation for another deserves the contempt of the profession and should be given no support.

The enactment of laws placing heavy penalties on the practice of substitution may also have a salutary effect. In several states such laws have been enacted.

Finally, the medical and pharmaceutical societies should give vigorous expression on the injustice of this dastard practice.

Report of French Committee on American Hospitals and Universities.

It is interesting to note the contents of a report made by M. Kahn to the Minister of Public Instruction of France, on the points of comparative excellence between the French and American hospitals and universities.

Kahn observes that nurses in all institutions in America are treated with greater distinction and respect than in France.

The public interest in the hospitals here is found deficient. Our

hospitals, he says, consist of two parts—the one devoted to the care of the sick poor, the other to those capable of paying, and paying well. With high hospital rates and frequent donations, the hospitals are able to aid a great many poor.

As to the free hospitals, they are found to be in a deplorable condition, almost throughout the country; very far beneath the ones in France. The patients in the free hospitals of this country are more sacrificed, as to personal comfort, individual inclinations and for experimentation than in France.

The universities here are not superior to the universities of France.

Ablation of Breast for Hysterical Nodules.

The existence of destructive lesions, disturbed functions and organic changes, imputable entirely to hysteria, have been established in a host of cases beyond any question. But a most singular disturbance has been reported as having occurred in a fairly large number of cases by Michard (*Jour. de Med. et Chir.*, March 10, 1902).

This consists of hysterical nodules in the breast that have been diagnosed scirrhous carcinoma, and ablated. Such a mistake seems absolutely unwarranted, and points strongly to the necessity of some sign, other than a hard lump in the breast, to justify the removal of that gland.

Cases of hypertrophy of the breast, mastodynia, lactorrhea, and hemorrhage from the nipple, all assignable to hysteria, have been reported. The duration of such stigmata is usually not very long.

The Prolongation of Life in Sea-Urchin's Eggs.

Scientists have taken great interest in the researches of Professor Loeb, in that he discovered in a series of experiments that the unfertilized eggs of sea-urchins can be kept alive for a long time in sea-water by adding a small quantity of potassium cyanide to it. He ascribes this prolongation of life to a checking of the normal catalytic processes in the cell by the chemical substance. From this and other similar experiments many generalizations as regards the origin and function of life were drawn.

Gorham, before the American Association of Pathologists and Bacteriologists, suggested that this prolongation of life might be due to the bactericidal effect of potassium cyanide and not to a specific action on the cell. In a series of experiments on the flat-fish, he discovered that life in the eggs was prolonged in direct proportion to the number of bacteria in the sea-water which were prevented from developing.

The conclusions from Gorham's experiments are so reasonable, that physicians will be very apt to accept them, and will eagerly look for a confirmation. If others find the same, it will have a strong tendency to overbalance some of the revolutionary generalizations which were made from Loeb's experiments.

MÉDICAL RESEARCH.

Review of Progress in Physiology, Physiological Chemistry, and Experimental Medicine.

In Charge of

JOHN ZAHORSKY, M.D., A. S. BLEYER, M.D., and PHILIP NEWCOMB, M.D.

Lipase.

The term lipase is given to the fat-splitting enzyme; it is also called steapsin, and its principal source is the pancreas. Indeed, it was supposed that this gland was the exclusive origin of this enzyme. Further investigation, particularly by Kastle and Loewenthal (*Am. Chem. Jour.*, XXIV), show that this ferment is widely distributed. By means of ethyl butyrate, which is readily decomposed by lipase, they demonstrated that the enzyme was present in the organs of a pig in the following relative activities: Liver, 2.93; pancreas, 1.00; kidney, 0.50; intestinal mucosa, 0.75; submaxillary gland, 0.36. Its presence was also discovered in the stomach. Furthermore, they demonstrated that lipase is also reversible in its action. The enzyme was also found in mammary gland and in the subcutaneous tissue, hence its widespread influence in the metabolism of fat.

Crofton has recently shown that trypsin, the proteolytic ferment of the pancreas, is widely distributed throughout the body. With increasing investigation the discovery of enzymes throughout the organ-

ism, while greatly adding to our understanding of metabolism, also complicates our knowledge of the life processes.

Glycosuria.

The greatest interest is gathering about the etiological relation of diseases of blood tissue to many diseases and disorders of organs and processes in the body, that formerly were held in inverse relation.

The calcareous heaps in arteriosclerosis are now explained on the hypothesis of a change in the arrangement of the inorganic blood salts. Many terms descriptive of symptoms springing from morbid processes in the liver, spleen and kidneys, have become obsolete because of the more definite and inclusive definitions, descriptive of changes in the blood cells, in the blood proteids and in the fibrin molecule.

We have been attracted recently by the experimentation of Laffont and Lombard (*Le Progres Medical*, April 5, 1902) by the novel claim that albuminuria, hemophilia and glycosuria have a common origin, and that the origin resides in the blood.

The assumption taken is no other than that the fibrin molecule, a quantity held in poor dignity in relation to every disease heretofore, is capable in itself of effecting changes of such character that serious disorders to the economy will result.

It has been observed that death can result from deficiently fibrinized blood in hemorrhage; and there are recorded cases of heart clot and sudden death from an elevation of the coefficient of viscosity of the blood. Thrombi occurring in adynamic states have undergone malignant degeneration and have produced death, and here as well because of change in the fibrin.

The recent experimentation of Laffont and Lombard has proven the fact that a deficient plasticity of the blood will frequently produce a hyperglycemia; that such a quantity of glycogen will be forced into the blood from the liver, that the sugar content will go beyond the ability of the blood to take care of it. Sugar will then appear in the urine; and the glycosuria can be traced again to the initial change in the fibrin.

Just how this hyperglycemia is produced is an unsolved problem. That it is traceable to influences of an irritating nature bearing on Bernard's diabetic center, or more intimately on the sympathetic nervous arrangement in the liver itself, is a suggestion, and only a sugges-

tion. That it is capable of producing a dystrophy of Langerhan's islands in the pancreas, is another suggestion. That it is the cause of the overformation of some glycolytic ferment which robs the economy of its store of glycogen, is another.

Diabetes is too broad a condition, etiologically, to admit of the application of too concise a principle for its causation; we know it to be produced from innumerable causes: Certain drugs—mercury, ether, nitroglycerin, nitrobenzol, alcohol,⁷ and phloridzin,⁸ and others can produce glycosuria.

Injections of suprarenal extract produce glycosuria.—Blum.¹

Herter² describes a suprarenal diabetes following derangement of function of these bodies.

Emotional disturbance in neurotics can produce it.

A certain class of diabetogenic leucomaines have been isolated.

There has been described a diabetes occurring in the course of syphilis of the secondary stage.—Daulos³ and Fournier.

Gastric hyperchlohydria is regarded as a possible cause of diabetes.—Robin.⁴

Sugar was found in 29 of 71 cases of diphtheria by Paul Binet.

Sheridan⁵ has described a toxic form, of bacterial origin.

Gautier⁶ has found that the injection of blood from asphyxiated dogs is capable of producing it.

Tumors in proximity to the floor of the fourth ventricle cause diabetes.

Pancreatitis is almost invariably attended with sugar in the urine. Fright, exposure, trauma, are all included in the etiology of this disease. So, that with such an array of causative factors, we are at a loss to account for any one acting specifically. If, however, a change in fibrinogen or in other blood proteids and globulins can effect a hyperglycemia, and, if with the older writers (Flint, Raynoso) we are willing to concede that an overcharging of the blood alone can account for the appearance of sugar in the urine, we should at least remember that in some of these varied conditions at the origin of the trouble, many may have acted in no other way.

The entire absence of pathologic findings in a large proportion of even the gravest cases of diabetes would further suggest that diabetes is often nothing more than a disorder of nutrition, and that this disorder may well have its seat in the blood.

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Blood Pressure.

Stanton (*Philadelphia Medical Journal*, June 7, 1902) revives this subject. A great variety of instruments have been invented to determine the blood pressure. The first was the sphygmomanometer of Von Basch. All of them require great care to insure accurate results. Three class of instruments are used: 1. Those using as a standard the degree of pressure required to obliterate the pulse, or better, at which the pulse recurs after having been completely shut off. 2. By determining the pressure at which the skin (usually the finger) previously anemic, regains its color. 3. That which employs the pressure at which the greatest oscillation of the artery is obtained as an index. The arterial pressure in a normal adult is given by Carter as 100 to 120 mm. in the standing position, and 90 to 110 in the recumbent position.

It has been found that the blood pressure is less under anesthesia. It is very much lowered on the evacuation of pleural exudates, cysts, ascites, etc. In advanced tuberculosis Burckhardt found a sinking of the blood pressure. This author also found that cold douches increase the blood pressure. In fever there is little change.

Carter found that the pressure was not increased in acute parenchymatous nephritis, in chronic nephritis the pressure is 62 mm. higher. Nitroglycerin and erythrol tetranitrate diminish and potassium iodid has no effect upon the pressure. Bleeding is the best means of reducing the pressure. After a hot pack the pressure is lowered.

Adipositas.

The affection variously known as obesity, lipomatosis, adipositas and polysarcia is grouped with gout and diabetes as a disorder of metabolism, and some authorities try to find a distinct relationship among these diseases. This relation has been found in the phenomena of suboxidation, which, it is presumed, underlies the pathology of the

three conditions. In one uric acid, in the other sugar, and in the third, fat are not adequately oxidized.

Jaquet and Svenson declare that no positive proof has been offered to substantiate the theory of suboxidation of fats in the metabolism of obesity; and they attempted to offer this medical proof. Observation in three obese subjects showed that while the respiratory interchange was normal in periods of starvation, following the ingestion of food, the increase in oxidation was less marked than in normal persons.

Colloidal Solutions of Metals.

Since the introduction of colloidal silver into therapeutics by Credé, much interest is being taken in the colloidal state of metals. The peculiar properties of metals in a finely-divided state have long been known, particularly marked in the case of platinum. In 1889, Carey Lea obtained a number of precipitates of silver by the use of reducing agents on silver salts, and found these substances soluble in water. He termed them colloidal silver. Other metals, such as platinum, gold, etc., have been obtained in this colloidal state. The usual way of preparing a colloidal solution is to immerse bars of the metal in water and pass a strong electric current through them, the water acting as a strong conducting medium from one to the other. The metal is broken off in very minute particles and remains suspended in the water. These solutions are analogous to solutions of starch and gum.

The principal property of the metal in such a fine state of division is its oxidizing power. This is called its catalyzing property. Jones calls the solutions inorganic ferment (Bulletin Johns Hopkins Hospital, May, 1901). He discovered that metals in such a solution oxidizes alcohol to acetic acid, inverts cane sugar and decomposes calcium formate. The similarity of catalysis and fermentation is very striking.

DIAGNOSTICS.

New Sign in Thoracic Aneurysm.

The sign is elicited by combined palpation and percussion as follows: The cricoid cartilage is grasped as is done for tracheal tugging, while an assistant percusses the chest. When normal parts are per-

cussed, the palpating hand feels a distant and feeble jar (proximal ends of the clavicles excepted), but so soon as the aneurysmal area is reached, a shock, which is both direct and resilient in nature, is felt, and somewhat suggestive of the sensation experienced by one when a rubber bag filled with water is simultaneously palpated and percussed. The sign has been found in four consecutive cases.—H. L. Smith in *American Medicine*, May 17, 1902.

The Blood-Count in Mumps.

In a recent wide spread epidemic of mumps occurring at Prague, Pick counted the blood-corpuscles in ten cases. The leucocytes were constantly normal. The absence of a hyperleucocytosis in this disease may serve as an aid to differentiate an orchitis due to other infectious causes.

The Unilateral Occurrence of Kernig's Sign.

The value of Kernig's sign in the diagnosis of meningitis is generally conceded; but it is not pathognomonic. It has been found in uremia and typhoid fever (Shields). Sailer (*American Journal Medical Science*) reports cases in which the sign was unilateral; he regarded it as a sign of focal brain disease. He concludes that Kernig's sign may occur as a symptom of focal encephalitis; it may be associated with a persistent tonic spasm of the flexor muscles of the arm; the most reasonable explanation of this phenomenon is that it is due to an irritative lesion of the pyramidal tract that diminishes but does not destroy its functional activity.

The Shape of the Tuberculous Chest.

Hutchinson (*Medical Examiner*, June, 1902) believes that the tuberculous chest is not flat, as we have been taught; but, on the contrary, round—the antero-posterior diameter, instead of being diminished is actually increased. The term flat-chested, as applied to the consumptive, is a misnomer. He finds that the relation of the transverse to the antero-posterior diameter of the average chest, called the "index" is about 70; that is, the depth of the normal chest is about 70 per cent of its width. In children the index is higher, up to 90. In forty tuberculous subjects the index was 79; the tuberculous chest is a persistent immature chest. He regards this comparatively high chest index as a valuable sign in the early diagnosis of consumption. The appearance of flat chest in the tuberculous is accounted

for by the fact that the shoulders are inclined forward; he is, therefore, round-shouldered. This gives the appearance of the flat chest.

Hyperchlorhydria.

The diagnosis of hyperchlorhydria can frequently be made by the existing subjective symptoms; discomfort or pain, appearing one or two hours after meals and alleviated by the ingestion of food, liquid or alkalies speaks strongly in favor of this condition. The diagnosis must be made decisive by a chemical examination of the gastric contents. If too great acidity (caused by HCl) is found and the just-mentioned symptoms prevail, the diagnosis of hyperchlorhydria is positive.—Einhorn in *American Medicine*, June 21, 1902.

Periodicity in Malaria.

Patrick Manson (*London Lancet*, May 17, 1902), in a valuable contribution on the diagnosis of malaria, while recognizing that periodicity—tertian or quartan, is diagnostic of malaria, insists that quotidian periodicity, while it may occur in this disease, should be absolutely disregarded in the diagnosis of malaria, since it is a symptom of many febrile movements.

Difficulties in the Diagnosis of Certain Febrile Diseases.

Butler (*New York Medical Journal*, June 21, 1902) reports ten cases of febrile movement which were puzzling, and the diagnosis was not made until late in the course of the disease. From a study of these cases he concludes that obscure persistent fevers belong to one of four groups: 1, concealed suppuration; 2, tuberculosis; 3, irregular forms of typhoid fever, and 4, malignant endocarditis.

Rarer Causes of Ascites.

The most frequent causes of uncomplicated ascites is cirrhosis of the liver. Compression of the portal vein, by a tumor or thrombosis, may also lead to an accumulation of fluid in the peritoneal cavity. A very common cause is chronic peritonitis; less frequently malignant disease of the omentum is a cause; a rare cause is obliterating endocarditis.

As a result of renal or cardiac disease, ascites may be a part of the general edema.

It has long been known that a rupture of a cyst of the ovary may cause ascites; Osler (*Philadelphia Medical Journal*) recently called

attention to the occurrence of ascites in solid abdominal tumors. He refers to several cases of solid tumors of the ovary associated with severe ascites. These tumors are benign; usually fibromata. Ascites may also accompany the growth of certain cysts of the ovary, particularly the *serosa invertens*.

Short Umbilical Cord.

Brickner (*Am. Jour. Obstet.*, April, 1902) believes that he has discovered a new symptom in the clinical diagnosis of a short umbilical cord; he found in two case that frequent urination in the second stage of labor in the interval of pains indicated a short umbilical cord. Other diagnostic points are: Recession of head during the interval of pain; arterial bleeding; pain over the placental site, especially during uterine contraction or during the application of the forceps; a desire of the patient to sit up.

THERAPEUTICS.

In Charge of W. L. JOHNSON, M.D.

The Treatment of Rheumatism.

The treatment of rheumatism by eating lemons, is not new but it has met with such splendid success, as to become a really scientific measure.

The proper way of prescribing then, Desplats, (*Journal de Med. et Chir.*, March 10, 1902) says, is to begin with two lemons; the second day, give four, the next day, six, then nine, twelve, fifteen, and so on up to twenty five lemons a day. Then the dose is gradually reduced. Two hundred (200) lemons should have been consumed in twenty (20) days.

It is found that few patients can keep up this strenuous pace at lemon eating, but will be surprised to see how easily they do consume enormous doses.

The effects seem to warrant the heroism of the treatment.

Treatment of Cardiac Complications of Grip.

Capitan (*La Medicine Moderne*) recommends a number of formulæ to meet various grippal cardiopathies. Whatever the form to be

treated, it will come under one of the two common heads of either arrhythmia (be this due to a myocarditis or to nervous disturbance) or of the anginal type.

In the arrhythmic form, the pulse is found soft, small and interrupted, the sounds are deadened, sometimes with a blowing timbre. The cardiac dulness seems increased. In this condition of things, asystole is imminent. The formula here suggested is:

R	Sparteine sulph.....	0.04
	Extr. strophanthi.....	0.001

M. Sig.—Dose, two or three of these pills per diem.

Strict milk diet, with perhaps some tea or coffee. In the anginal form, we find attacks of retrosternal pain, sometimes shooting into the epigastrium, or into the arms, paroxysms of intense dyspnea, especially nocturnal. The pulse very hard, with high tension; rough aortic bruits are heard, which have sometimes a blowing character. In this condition trinitrin is recommended:

R	Sol. trinitrin alcoholici 1 per cent.....	gtts 10
	Aqua distil.....	gm. 50

M. Sig.—Dose, one dram once or twice daily. Spartein can be given at the same, in small quantities.

At the time of severe crisis, the following:

R	Morphin hydrochlor.....	0.10
	Analgesine.....	2.00
	Atropin sulph.....	0.0025
	Sparteine sulph.....	0.40
	Cocain hydrochlor.....	0.10
	Ammon. acetat.	2.00
	Aqua destil.....	50.00

M. Sig.—Dose, one dram, can be repeated in ten minutes, and again in fifteen minutes if necessary.

The following may be of value as an inhalation from a handkerchief:

R.	Alcohol.....	
	Ether.....	
	Chloroform.....	aa 5.00
	Menthol.....	1.00
	Pyridine.....	3.00
	Ammonia.....	gtts xx

M.

Orthoform in Syphilitic Headache.

Dimitroff (*Ibid.*) recommends the use of orthoform in syphilitic headaches. The salutary effect of this drug has been repeatedly observed in cases that did not yield to mercurials and iodids. He administers fifteen grains per diem, and raises this to thirty grains if relief does not come after twenty-four to forty-eight hours. Rarely, a sensation of dulness is left in the head which, however, remains but a very short time.

Treatment of Erysipelas by Exclusion of Chemical Rays.

Le Revue International de Théap. Phys., February 1, 1902, contains an interesting report of eighteen cases of erysipelas, treated by the simple exclusion of all chemical rays. The only light to which the patients were exposed being the red light. The greatest care was taken to avoid even the briefest exposure to solar, or other rays. No medicinal agents were used either systemically or topically. Of the eighteen cases, fifteen were cured inside of two and a half days; seven of these were cured in one day.

The merits of the method are convincingly explained. The author, Dr. Krukenberg, of Liegnitz, drawing attention to the rarity of erysipelas in dark skins, containing much pigment, and further, to the fact of the predilection of erysipelas for the face, the part most exposed to solar rays. He concludes that either the solar rays have a favorable action on the propagation of the erysipelatous cocci, or else that the action on the skin of the rays is to make it a more fertile soil.

He suggests that the efficacy of many non-transparent local applications, used in erysipelas, such as ichthyol, tincture of iodine, the colored oils of Barwell and various plasters and antiseptic dressings is probably due to the fact that they exclude the solar rays.

At any rate, such startling statistics are worthy of the most careful consideration, and the little success from this same method of treatment in the past, might be waved aside, with such encouraging reports.

SOCIETY PROCEEDINGS.

MEDICAL SOCIETY OF CITY HOSPITAL ALUMNI.

*Meeting of April 3, 1902; Dr. Given Campbell, Jr.,
President, in the Chair.*

Dr. E. C. RUNGE read a paper (see page 98, this issue) on

Epilepsy.

DISCUSSION.

Dr. C. W. THIERRY said the point to impress upon the members is that epileptics are always dangerous. During the pre-epileptic stage some go through a psychical stage of a maniacal character and at this time they often think they are mistreated and will attack people ; these attacks come on spontaneously and without premonition. This element of aggressiveness is present in those in which the psychical element prevails. In some, the ordinary fit is replaced by a psychical equivalent. With some, the idea is inherent that they wish to do some particular harm. When they intend doing harm they resort to any means in their power, and the sight of blood instead of causing them to desist, often rather incites them. In private practice we should always be on guard for the safety of the family. Epileptics are always dangerous people.

Dr. M. A. BLISS thought it would be a very difficult process to obtain legislation to confine epileptics, granting that it is necessary to confine them. He mentioned the case of a patient who would be sitting in a chair talking lucidly, and suddenly become slightly tremulous, and after being fidgety and nervous for half a minute, he would jump off the chair, yelling at the top of his voice and rush across the room and back again until thoroughly exhausted. This man was said to have attacked his wife with an ax, and knowing that epileptics may at any time become exceedingly dangerous the speaker wrote out a commitment. This was in the county, and the patient was taken to Clayton. By the time he arrived there the man was as sound as any

person and I could not explain to the authorities that this man was not perfectly sane, so they turned him loose. The patient would have mild attacks and very severe seizures; he called his mild attacks "laughing spells," and had practically no recollection of them.

The case shown by the essayist is very interesting from the fact that the man recollects the visions he sees in his attacks. An essential feature of epilepsy is unconsciousness.

Dr. RUNGE, speaking of the case mentioned by Dr. Bliss, said the man was not always unconscious during the mild attacks. When in one of these attacks the speaker was able to stop him for a moment, but the man would say: "I can't help it," and go on screaming again. This patient was considered an extremely dangerous person.

He mentioned the case of a man at the asylum who was sitting on the stage during one of the balls. The man's wife was there and had foolishly given him a pen-knife. The Doctor looked over that way, and though he only had a profile view of the man, saw that he was glaring in a manner, peculiar in epileptics, at his wife. Immediately calling assistance, he went over and had the man surrounded and the knife taken from him. No doubt he would have made some attempt to injure the woman had he not been discovered in time.

The man who recently killed his babe in the county knew what he was doing but could give no account of it; he said it was like a dream.

An epileptic who has had siezures from youth should be put in an asylum; he is better removed from society.

Dr. FRANK HINCHEY read a paper (see page 86, this issue) on

Complications in Typhoid Fever.

DISCUSSION.

Dr. F. G. NIFONG said that typhoid perforations and their diagnosis are becoming especially interesting from a surgical standpoint. It is now possible to close perforations in time and save lives. He recently saw an inreresting case with Dr. Bliss—a typical typhoid of three weeks; a slight hemorrhage from the bowel at the end of the third week. The fever subsided completely, and after a few days the patient left the Mullanphy Hospital for his home. Two or three days later the patient had a chill followed by high temperature, quick pulse, anxious expression, tympanitic tenderness, etc. The patient not being in hospital and also averse to operation, after explaining to him

we concluded to thoroughly paralyze the bowels with morphin. The temperature, tympanites and tenderness continued the same for about forty eight hours and then the symptoms began to decline. On the fourth day following he was clear of fever and he made a rapid and complete recovery. We think Nature kindly closed the perforation.

Perhaps there have been more perforations closed at the Johns Hopkins' Hospital than elsewhere. While there on a visit a perforative symptom appeared in a patient about 7 p.m. Blood counts were made hourly, showing rapidly-increasing leucocytosis and the perforation was closed at 2 a.m., with the patient doing well next day. This expeditious work is hardly possible outside of a good hospital.

Osler reports 23 cases of typhoid perforation, a series of 16 operated cases with 6 recoveries and another of 11 cases with 5 recoveries, which shows a good percentage.

Russell, of Boston, comments on the importance of blood counts in diagnosis and says that increasing leucocytosis does not necessarily mean a perforation unless other symptoms are marked, but concludes that rapid increase with abdominal distention is justification for exploration.

Osler reports three cases operated on which did not give typical symptoms but perforations were found, and in one case the gut was too friable to close the hole successfully.

The speaker had a case of thrombosis, similar to the one mentioned by the essayist, about two years ago. After the fever had run its course and the temperature had become about normal, the patient suddenly developed a chill, followed by two more at about eight hours intervals; the temperature went higher and the rigors were severe and exhausting. The femoral and popliteal veins were apparently completely thrombosed, swelling and edema resulted and lasted for weeks; but the patient finally made complete recovery. It was a left side phlebitis. Of Osler's sixteen reported cases, fourteen were on the left side.

Dr. BLISS mentioned that Osler had recently made a statement in regard to the number of relapses in typhoid fever, claiming that they are quite frequent, and concluding that a relapse is quite typical of typhoid fever, mentioning a case in which there were three distinct relapses and a number in which there were two.

Dr. RUNGE said he had had a typical attack of typhoid fever when a young man. Not long ago he was sick for a few days and there being a few cases of typhoid fever in the building he had his blood examined by the City Chemist. A notice was returned that it was typhoid fever, and in a day or so he was up. It is interesting in that we are able to get a reaction after such a long lapse of time, covering 25 years.

Dr. ELLA MARX mentioned, *apropos* of Dr. Runge's statement, a case showing the different effect on the nervous system of a highly nervous typhoid fever patient, of high temperatures due to the typhoid state, and those equally high due to complications. She saw the case in the beginning of the third week of fever; the temperature ranged from 104 to 105°F., the patient being wildly delirious—necessitating the straight sheet for 72 hours. Gradually the delirium diminished and the temperature fell to 99 or 100°F. At this time she contracted mumps followed by a peritonsillar abscess, and for days the temperature ranged about 104°F. but there was no return of delirium or any apparent effect on the nervous system.

Dr. N. W. SHARPE felt that to-day the physician who is in charge of a typhoid fever case threatened with perforation, or that has sustained a perforation, is not doing full justice to his patient unless he submits a proposition to the patient to undergo an operation. He ventured to say, without any spirit of criticism, that the average typhoid fever case of to-day under the charge of the average general practitioner is not watched by any means as closely as it should be. Not only is it not watched adequately from the gross clinical standpoint, but even the simple forms of laboratory diagnostics, which include an examination of the blood at frequent intervals (and which presupposes the supervision of a competent physician at the bedside more or less constantly), are not employed as a routine practice.

The second point to which he alluded is that there is no hospital in St. Louis adequately equipped for the handling of surgical and medical cases; affording both the attending physician and the patient a tangible exemplification of the advanced knowledge of the profession in its contest with disease. He believed that he spoke within the truth when he stated that no hospital in St. Louis (save the City Hospital) was in a position to furnish a leucocyte curve of an inmate. The essayist had noted that he was unable to secure a portable bath-tub

for his patient. Though the hospital alluded to is not one of the largest, yet it is one of the better class, and presumably is equipped for handling the sick. Yet this is a sample of the local situation.

Are not we as medical men at fault in not persistently demanding better facilities? We have heard much this evening of "psychic stimulation." He suggested that in St. Louis there was a vast field open for the "psychic stimulation," by physicians, of their wealthy patients, to the end that a sufficient number of adequately endowed hospitals might be made accessible to the sick. While thoroughly in accord with the munificent gifts to libraries and universities he could not but emphasize the local hiatus for properly endowed, properly equipped and properly conducted hospitals.

Dr. H. L. NIETERT and Dr. LOUIS RASSIEUR presented (see pages 93—107, this issue)

Anatomical Specimens.

DISCUSSION.

Dr. ROBERT LUEDEKING, referring to the specimen of abdominal tumor presented by Dr. Nietert, said the case came to him in the childrens clinic on March 8th, from the surgical division, with a history about as follows:

On catheterizing the bladder two ounces of urine were found, no calculus; palpation showed a tumor with an uneven surface extending from the pubis to one inch above the navel and laterally to the right kidney; digital examination of the rectum showed the bladder normal in shape and a provisional diagnosis of neoplasm, vis., sarcomatous degeneration of the kidney, was made.

It was stated to the speaker by Dr. Eberlein that he had made out two points, which seemed to be at variance with the diagnosis of sarcomatous degeneration of the kidney—namely, bloody urine had not been passed excepting on two occasions, and, that on examination of the abdomen, there was no bowel before the tumor.

The speaker then made an examination and found a globular tumor occupying the center of the abdomen and extending to the left and right; on palpating this was found to be tender and painful. There was also found a mass extending somewhat toward the right. He wanted to emphasize the fact that there was no bowel before the tumor—it was absolutely flat and solid.

Going into the history more closely he found the patient had had a severe fall upon the abdomen, in November, while crossing the street and immediately afterward he passed on two occasions bloody urine, and from that time on the child's health began to fail.

From these facts the speaker decided that the neoplasm was of an acute traumatic origin and malignant, and he favored Dr. Eberlein's opinion that it involved the mesentery or omentum. He had no idea that the intestines were involved also, as the specimen shows was the case, because there was no intestinal obstruction; but the specimen demonstrated that Dr. Eberlein's opinion was correct.

Dr. CARL FISCH said the tumor represented a very rare condition, that is a sarcoma of the large intestine. There are only twenty-two of these cases recorded. The condition occurs in all ages, the greater number occurring between 40 and 50 years of age and a remarkably great number in the male. Nothing is known of the etiology of these cases. In this case the involvement of the bladder, which was thought to be the seat of the origin of the tumor, is certainly secondary. The reason why he assumed the origin to be around the ileocecal valve is that the involvement is most advanced in this part of the large intestine, while the involvement of the small intestine and of the descending colon is lighter in degree and can be followed from the primary focus in some places to a normal portion of the small intestine. The peculiar cavities seen in the tumor are nothing but the cavities of the intestinal tract which have become relaxed and dilated. The masses in the walls of the cystic dilatations consist mainly and purely of sarcomatous tissue with only a few remnants of muscle fibers showing the original nature of the tissue.

It was very interesting in listening to the history of the case to note that there was no intestinal obstruction; this seems to be a general symptom in such cases. Several attempts have been made to explain this, which is in distinct contradiction to any carcinomatous trouble, and the opinion most favored now is that this condition is due to the early affection of the muscle fibers, this early involvement causing a paralysis of the muscle fibers which is followed by dilatation. He had examined a great number of sections from the specimen and found only pure round-celled sarcoma. The involvement of the bladder was a secondary effect.

Dr. A. H. MEISENBACH said the great peculiarity of this growth

formation is that the bowel was not obstructed. This condition is also seen in new growths, such as tuberculous infiltration of the mesentery involving large areas. The etiology of the condition is also of interest. We know that trauma, both in the young and aged, predisposes to sarcoma. Cases of osteosarcoma have been seen which could clearly be traced to an injury. Why it is that an injury is prone to produce a sarcoma and not other malignant growths he could not answer. In young children, therefore, presenting these symptoms, we can usually limit the diagnosis to one of two conditions—either sarcoma or a tuberculous tumor. If tuberculous, we will have a previous history; but if sarcomatous, there may be a history of trauma or congenital inheritance. The starting point of this tumor, he thought, might have been retroperitoneal.

Dr. SHARPE thought the statement made in discussion in regard to the differential diagnosis in these cases ought not to go unchallenged. It had been stated that in tuberculous involvement of the mesentery there would be a previous history. In the speaker's judgement this is not necessarily a fact.

Dr. MEISENBACH said he believed that a case of tuberculous involvement of the mesentery, or other abdominal organs, will usually give a history of tendency toward that condition, either family history or a history of suffering previous to the development of that particular condition sufficient to make a diagnosis pretty clear.

Dr. R. B. H. GRADWOHL said an infection of the tubercle bacillus might take place in the mesenteric glands without causing other symptoms of tuberculosis in the child.

Dr. NIETERT said he could not see why the bladder should not be considered the point of origin of the tumor. There was a history of trauma, with several hemorrhages from the bladder, and he thought these hemorrhages pointed to the place of origin.

Dr. LUEDEKING was inclined to believe the starting point of this trouble was in the bladder. Following the injury there was pain in the abdomen, hemorrhage from the bladder, and there must have been an inflammatory state in the fundus which led to a possible attachment of a portion of the mesentery or intestine.

REPORTS ON PROGRESS.

MEDICINE.

In Charge of A. LEVY, M.D.

Glycosuria of Muscular Origin.

Cadeac and Maignon having determined upon guinea-pigs and dogs that placing a ligature around a paw or crushing a muscular mass, was always followed by the appearance in the urine of glycuronic acid alone or associated with glucose, have made researches of the same kind on injured persons.

They observed that every complete fracture was followed, in children as well as adults, by the elimination of glycuronic elements (at times even glucose), beginning generally two or three days after the accident and persisting from three weeks to one month, until the local disturbance in the neighborhood of the fracture had almost disappeared.

The glycuronia always precedes the glycosuria, the latter being not always present. When it exists it is proportional to the severity of the lesion. It is very abundant in multiple fractures. The excretion of glucose and glycuronic elements is most probably of muscular origin, for in animals killed after mashing a limb, only traces of sugar are found in the healthy muscles while large quantities are found in the injured muscle.

Experimental Alimentation with Chlorids in Nephritis.

H. Claude and A. Manté, before the Société Médicale des Hôpitaux, said that chlorid of sodium given in excess in feeding is eliminated by the urine in variable quantities according to the condition of the kidneys, and this fact affords, in nephritis, valuable prognostic and therapeutic indications.

After having for some days analyzed the urine of a patient placed on a uniform diet, and having determined the rate of elimination of nitrogenous substances, urea, phosphates, chlorids, etc., add to the former diet 10 grams of sodium chlorid and a half liter of water per day, and different results of elimination may be noted.

In healthy subjects the chlorid of sodium is almost completely eliminated in twenty four hours, without increase of the other constituents of the urine.

The same is true of certain mild nephrites which do well on a diet other than milk.

In other nephrites a slight increase in the elimination of chlorid of sodium is noticed, coincident with a marked increase in other substances than chlorids perishing after the administration of chlorids has been discontinued. This class of cases bear their kidney lesions well, even on a mixed diet.

In a third class of nephrites, a severer type, requiring a milk diet, there is a slow elimination and slow disappearance of chlorid of sodium, with slight increase of substances other than chlorids.

Finally, in a fourth class, the quantity of sodium chlorid eliminated does not vary during the test, while the other substances are eliminated in very great quantity. These cases are grave, rapidly fatal, with or without uremic attacks, and will only allow of an exclusive diet of milk. These facts are observed in parenchymatous as well as in interstitial nephritis.

Diagnostic Import of the Floating Tenth Rib.

Dr. Zweig, Clinic of Prof Boas, Berlin (*Archiv f. Vendant.*): According to examinations of cadavers, the tenth rib is movable in 97 per cent of all cases, yet it is said to have a clinical importance as a sign of the existence of enteroptosis and nervous dyspepsia. Zweig found the floating tenth rib in life in 50 per cent of all cases examined, in men as often as in women. The great majority of those in whom it was found suffered with nervous dyspepsia. Yet 34 per cent of those who had a movable tenth rib were free from nervous dyspeptic symptoms.

Typhoid Bacilli in the Urine Long After Convalescence.

Büsing (*Deutscher Medizinische Wochenschrift*, June 19, 1902) reports a case in which bacilli, proven morphologically and biologically to be typhoid bacilli, were found in the urine for months after the patient recovered. The patient was a soldier who contracted typhoid in Tien Tsin during the recent disturbance in China. After a fairly typical course of the disease the patient was discharged from the hospital

and the condition of the urine was only noticed later, when the patient was examined for some other trouble of slight importance.

It shows how long the typhoid bacilli may persist in the urine without clinical manifestations. In this case they persisted four months and the patient was undoubtedly a menace to his associates during that time. The urine of such a patient should be disinfected and he should not come into general intercourse with people until the bacilli have disappeared from the urine.

The Occurrence of Sugar in the Stools of Diabetics.

Rössler's (*Zeit f. Heilkunde*) experiments showed that sugar could not be found in the stools of healthy persons although it is possible to determine a quantity less than 0.05 per cent. On the other hand, in the stools of diabetics, sugar is found in appreciable quantities, especially when diarrhea exists. The amount of sugar increases with the ingestion of grape sugar and milk sugar.

OBSTETRICS.

In Charge of B. W. MOORE, M.D.

Albuminuria in Pregnancy.

E. E. Morse (*American Journal of Obstetrics*, April, 1902) enters the contention that albuminuria is not inconsistent with general good health, that there is a properly so-called physiological albuminuria. Albuminuria in pregnancy is an uncertain sign, and may exist without any indication of toxemia. The writer emphasizes the value and importance of urea estimations as a means of determining impending danger from toxemia.

Ablatio Placentæ.

Holmes (*Ibid.*, December, 1901) gives a study based upon 200 cases of premature detachment of the placenta which he has collected from the literature. His conclusions, slightly abridged, are as follows:

1. The etiology of ablatio placentæ is generally dependent upon pathologic conditions and, exceptionally, on traumatism.
2. As a pathological entity ablatio occurs once in about two hundred pregnancies, and is of clinic importance once in five hundred.

The difference between the occult and open types is largely dependent upon the manipulation of external bleeding in the latter; the complete blood retention in the former generally produces an exaggeration of the uterine distension, an accessory tumor and shock.

3. To put it in paradox, ablatio is an abortion in the latter months of pregnancy.

The treatment demands these considerations:

1. The mild cases must be carefully watched. Quiet, ice bag, morphia and hydrastin should be used.

2. Severe cases in labor should be rapidly delivered.

3. When not in labor it should be induced. Externally, friction; internally, the Barnes' bag.

4. The tampon should have no place in the treatment of ablatio. The membranes should be preserved intact until delivery is expected. The placenta must be removed immediately after the child.

Thyroid Therapy in Puerperal Eclampsia.

H. Oliphant Nicholson, of Edinburgh, (*La Semaine Medicale*, May 21, 1902) having observed that certain convulsive affections appear to be favorably affected by the administration of thyroid extract, was led to try this remedy in several cases of puerperal eclampsia, where the usual treatment of rest in bed, milk diet, etc., was of no avail. Five grains of the extract were given, to be repeated every three or four hours as needed. Under this treatment, combined with appropriate diet, the untoward symptoms disappeared in a few days.

Artificial Serum in Incoercible Vomiting of Pregnancy.

R. Condamin (*Ibid.*, January 15, 1902), upon the assumption that incoercible vomiting of pregnancy is due to a general intoxication of the organism, has systematically treated this condition by the administration of artificial serum by the rectum in daily amounts of three to four liters, divided by preference into doses of 300 cc. The injections should be made very slowly, each taking ten or fifteen minutes. If peristaltic movements begin the injection should cease, to begin later. In case of intolerance a few drops of laudanum may be added to the serum, or the serum may be given hypodermatically. The treatment should extend over a period of ten days, during which time all food should be withheld. The author reports eight cases successfully treated by this method.

Eclampsia.

At the December meeting of the Chicago Gynecological Society Dr. Frankenthal reported a case of eclampsia occurring in private practice. The eclamptic attack occurred twenty-four hours after delivery. She was treated by chloroform inhalations, morphin, subcutaneous salt solution, hot pack and elaterin by the mouth. She recovered. The interesting part of the history was that she had been kept on a non-nitrogenous diet for several months and the urine was absolutely normal. No albumin could be detected at any time, although the urine was examined every two weeks. Five hours after the convulsion albumin was present.

NEUROLOGY.

In Charge of M. A. BLISS, M.D.

Neurasthenia.

The *International Medical Magazine*, for February, 1902, contains papers of great value by Rockwell, Brower, Angell, Baruch, Sinckler, Wolfe, Pearce and Mills, and Pope and Gleason.

Rockwell says the condition is much more common in men than in women and cites heredity as a most important factor in its production. Sexual excess, especially among the unmarried, is also a fertile cause.

In the matter of treatment Rockwell emphasizes the importance of carefully studying each case before deciding whether work or rest shall be recommended. Mental therapeutics is useful when the physician can command the full confidence of his patient. Drugs must be used while the slower processes of electricity, hydrotherapy and massage are helping restoration. Bromide of zinc, belladonna and cannabis indica are useful. Electricity is dwelt upon as of great use. The static current is especially valuable in disturbed circulation resulting in local congestions.

Brower writes of the drug treatment and gives a number of prescription. Aloes, taraxacum, ipecac and hyoscyamus for bowel elimination; citrate of potash for renal elimination. Chlorid of gold and sodium with pulverized guaiac is used for exhaustion. Blaud's pill for anemia, glycerophosphate of calcium and nux vomica as general tonics, bromide of soda as nerve sedative.

Angell writes of the educational management, urging removal from associations which stimulate subject in feelings. Isolation amidst unfamiliar surrounding with a strange nurse is of great importance. Systematically arranging for every hour in the day, and later gradually leading up to self-reliance is conducive to recovery. Some things in spite of discomfort and depression is at last taught.

Baruch writes of hydrotherapy and cites some cases, unrelieved by other methods, promptly cured. Prolonged applications of neutral or mild temperatures and pressure are preferable. Later a wet pack is used, and finally a colder effusion as a drip-sheet at 75°.

Sinkler writes of treatment, recommending the careful search for and removal of contributing causes, as indigestion and eye-strain. The rest treatment is given preference and full-feeding and hydrotherapy insisted upon as most important adjuvants.

Sinkler says drugs are useful, citing the cases helped attending out clinics among whom little else may be applied. Strychnin does not, as a rule, agree. Iron, some of the nuclein preparations, arsenic in the form of solution of gold arsenic, phosphates, asafetida and valerenates, bromide of soda and phosphates of soda are mentioned as useful.

Wolfe writes of the relations and distinctions of hysteria neurasthenia and hypochondriasis. "We tread on the psychical side, sometimes, very near true real alienation, and again, are close to what we must concede the limits of normal health. No organ or tissue is exempt from liability to disturbance, and just as constantly is disturbance the only demonstratable fact."

Convulsions occur only in hysteria. Spasmodic twitching of single muscles more often in neurasthenia Tremor in all, but most often in hypochondriasis. In neurasthenia and hysteria the tendon reflexes may be increased. In hypochondriasis, if affected at all, diminished.

In neither neurasthenia or hypochondriasis is there even any disturbance of causation equal to the more pronounced conditions found in hysteria, and the special senses fall in the same strain.

Most patients in all three conditions suffer from digestive troubles, real or fancied. Prolonged vomiting may occur in hysteria. In hypochondriasis the patient may aver there is an obstruction.

The genito-urinary organs are productive of symptoms in all.

In neurasthenia, men are prone to impotence, women to menstrual irregularities.

All suffer by comparison in a mental way with the rest of the same population. They obstruct where they should help. They fail and collapse just at the moment when strength and stability are essential. Always amongst the first to declare their principles; always in the lead in new projects; always ready to sacrifice, when the real test for capacity comes, they waver and desert. Where these conditions result in insanity hysteria tends to mania, hypochondriasis to melancholia, neurasthenia to dementia.

The Close Relationship Existing Between Epilepsy and Dyspepsia.

Charles D. Aaron (*Philadelphia Medical Journal*, October 5, 1901) says we may see epileptic convulsions after continued irritation of peripheral nerves through cicatrices, foreign bodies, tumors, inflammatory exudates, intestinal worms, diseases of the sexual organs, etc., and that removal of the causes of these irritations frequently result in the disappearance of the epilepsy. The experience of many observers lead to the conclusion that certain poisons produce epilepsy and a close relationship is thought to exist between this disease and putrefactive processes in the intestine. Aaron cites cases in which the attacks were markedly diminished by the administration of benzol and resorcin after washing out the stomach, a rigid dietary being followed.

Analysis of the stomach contents especially to establish the presence or absence of hypochlorhydria, and of the urine for indican, is advised as a routine practice in examination of epileptics, especially the former, for digestive troubles are frequently latent.

The Relation of Local Diseases to Nervous Disorders.

Frederick Coggeshall (*New York Medical Journal*, March 29, 1902) takes the middle ground on this question and writes a very useful article showing how neurasthenia is often produced by a relatively slight added irritation. "It is the last straw," etc., and this straw may be very infinitesimal in weight.

The gynecologist and the oculist may find, each in his respective department, a sufficient cause for the neurasthenia state, but, they too often think all that is necessary is to remove the local irritation and

forget that the nervous damage wrought may require months of careful treatment to repair.

Coggeshall does not minimize the importance of local disorders in the production of neurasthenia and finds the discussion of their importance with the patient a matter for careful determination unless they can be immediately and fully corrected.

Several illustrative cases are given; one in which a neurasthenia state promptly supervened each time a local disorder gave continued pain; another in which a lacerated cervix produced a neurasthenia after three consecutive labors, the nervous symptoms disappearing quickly after repair.

Primary neurasthenia is not disclaimed, but the secondary form is thought much more common.

Locomotor Ataxia.

Dudley Fulton (*Journal Nervous and Mental Diseases*, April, 1902) tabulates twenty-one symptoms of locomotor ataxia in order of frequency of occurrence. The eight of greatest relative frequency were, lost knee jerk 88 per cent, Romberg's symptom 80 per cent, ataxic gait 77 per cent, lightning pains 73 per cent, paresthesia 70 per Argyll Robertson pupil 67 per cent, inco-ordination 65 per cent, vesical disturbance 60 per cent.

Conditions most often requiring differential exclusion are, certain forms of peripheral neuritis, neurasthenia, spinal syphilis and early paresis.

One can scarcely diagnosticate paresis without the presence of some of the cord symptoms of tabes.

Prognosis in tabes is not altogether bad. Improvement in general health may be had, and often the diseased processes may be delayed for an indefinite period.

The disease is much more common in men than in women. Hereditary influences are rare. Exposure to wet and cold, fatigue, excesses, particularly sexual, are considered predisposing causes. Alcohol and tobacco play a prominent rôle.

Less importance is now ascribed to syphilis than formerly, the position taken by many at present that from 45 to 80 per cent are thus caused.

A large proportion of the author's cases gave a definite history of

gastro-intestinal disturbance, and much stress is laid upon this fact in treatment.

Hydrotherapy is given the foremost place in treatment. Frankel's treatment by training the co-ordination is favorably mentioned, and suspension, or its equivalent, is recommended.

OPHTHALMOLOGY.

In Charge of W. A. SHOEMAKER, M.D.

Employment of Suprarenal Extract by the Oculist.

L. Thilliez (*Jour. des Sciences Med. de Lille*) has gotten very satisfactory results from the use of suprarenal extract in ocular affections. He uses a solution composed of equal parts of distilled water and the dried suprarenal powder, carefully sterilized and preserved in glass receptacles holding one gram. It is a brownish liquid and can be preserved indefinitely in a sealed tube. The profound anemia which is induced lasts from one to two hours, according to the quantity used. Its vasoconstrictor action is greatest on the conjunctival vessels, but is also marked on the sub conjunctival vessels. Its action is constant, and the author recommends its use in severe conjunctival injection, keratitis, iritis and glaucoma.

Cataract Operations in the Aged.

E. Mendel (*Berliner Klin. Woch.*) thinks advanced age does not offer an unfavorable prognosis for cataract extraction. Delirium occasionally occurs, but the most serious complications are those related to the heart, lungs and bladder. His observations embrace 1645 cases of nuclear cataract among which there were 36 cases over 80 years of age. The results were unsatisfactory in only 2 of the 36.

Primary Gangrene of the Eyelids.

Roger and Weil (*La Presse Medical*) report a case of primary gangrene of the eyelids in a man, aged 33 years. Edema suddenly developed at the internal canthus, which rapidly spread to the upper and lower lids and surrounding tissues, producing an erysipelatous condition, upon which appeared spots of gangrene; there were no phlyctenules and no enlargement of the neighboring glands. The constitutional symptoms were fever and albuminuria.

The lids were punctured and cultures made from the fluid obtained. These showed an aerobic micrococcus, pathogenic for rabbits and guinea pigs, but not for rats or mice. Under treatment the condition gradually improved. Primary gangrene of the eyelids is very rare; this seems to be the first case reported. Like gangrene of the breast, gums and male genitalia, in which aerobic micro-organisms have been found, this condition is curable.

Bifocal Lenses.

John E. Weeks (*Medical Record*) gets the best results with the small oval "plaster," placed on the distance lens so that it will give sufficient field area at the reading distance, and will also permit of distant vision almost, if not entirely, around it. The "plaster" should be oval, 10 mm. in its vertical, and 15 mm. in its horizontal diameter. If the disc is placed two mm. above the lower edge of the distance lens it will permit of sufficiently clear vision below to enable the wearer to see the curb, descent stairs, etc., without trouble. The dispersion rays of light occasioned by the edge of the "plaster" can be minimized by making the edge very thin.

Idiopathic Detachment of the Retina.

Sinclair (*Journal of Pathology*) has studied by experiment the etiology of detachment of the retina. He believes that the theory of Nordenson, that the detachment is caused by the traction of adhesions between the vitreous and retina is, in some cases, the correct explanation, but does not think it applicable in the majority of instances. He thinks the theory of diffusion is the correct one in most instances. He produced detachment in rabbits' eyes by the post retinal injection of salt solution, and also of blood plasma; after the injection of the latter the detachment progressed, owing to the continued accumulation of fluid diffused from the vitreous. The vitreous fluid is composed mostly of water (98 per cent), while the post retinal exudate, in inflammatory conditions, is a highly albuminous fluid. Looking upon the retina as a dialysing membrane, an accumulation of inflammatory exudation, behind the detachment, will tend to increase by the process of diffusion of the vitreous fluid through the retina; this is the only way we can account for those cases where there is a rapid extension of the detachment without increase of intraocular tension. The fact that changes in the vitreous often takes place in eyes in which retinal

detachment subsequently occurs can not be taken as proof that they cause the detachment. The truth seems to be that both conditions are brought about by uveal inflammation and are, therefore, frequently found together.

OTOLOGY AND RHINOLOGY.

In Charge of LEO. CAPLAN, M.D.

Complete Perforative Tubercular Ulceration of the Soft Palate.

Clauda (*Arch. Inter. de Laryng.*, January, 1902) states that perforative tubercular ulcerations of the soft palate are very seldom, and only a dozen cases have been so far reported. The writer reports a similar case, in which the first symptoms were coryza, hoarseness and, after a short time, difficulty in swallowing; the latter symptom gradually reached such an intensity as to render the act of swallowing impossible.

Examination revealed an ulceration on the right tonsil, the size of a cent, and a smaller one on the right posterior arch. The ulcerations were of a pale-yellowish color, very superficial, almost entirely dry and covered with white confluent granulations. The edges were not sharply defined and serrated; the velum was slightly thickened and on its right half there were visible a row of very characteristic yellowish miliai tubercles; there were also slightly enlarged cervical glands on the same side. The laryngological examination showed a slight infiltration of the arytenoid cartilages and ventricular bands. Diminished elasticity of the right apex, and bronchial respiration. In the secretions there were no tubercle bacilli found.

Under application of antiseptic powders and lactic acid locally, and general tonics the patient improved and, after a few days, disappeared. After two months he presented himself again. The ulcerations on the tonsil and right arch were larger, and on the free edge of the right side of the velum there was an ulceration one inch long and a half inch deep, and on the same side of the velum, a quarter of an inch from the median line, there was a perforation of the size of a pea, with all the characteristic symptoms of a tubercular ulceration. This time the examination of the secretion showed the presence of tubercle bacilli. Under the application of gradually increasing strength of lactic acid solution the ulcerations showed a tendency to complete cic-

atrization and the dysphagia diminished. In five months the patient died of tuberculosis of the lungs.

The writers conclusions are:

1. The observations of perforative tubercular ulcerations of the soft palate are relatively rare, and these ulcerations are secondary and belong to the late symptoms of tuberculosis.
2. The only affection which could produce the same result is syphilitic gumma, but the differential diagnosis is easily made on account of the entirely different appearance.
3. The tubercular ulceration is always accompanied by almost total dysphagia on account of the excruciating pain.
4. Tubercular ulcerations lead rapidly to extensive destruction.
5. The best results are obtained by lactic acid.

Infectious Otitis Media Without Its Usual Subjective Symptoms.

Hiram Woods (*Maryland Medical Journal*, January, 1902) calls attention to the possibility of grave systemic disturbances caused by infectious otitis media, while the local ear symptoms may be absent or very light. He gives the history of several cases of obscure origin and wrong diagnosis which were explained only after an examination of the case.

In one case of infectious endocarditis, in a boy, a history was obtained of transient earache and defective hearing two weeks previous. An examination showed redness of Shrapnell's membrane, and on incision pus was evacuated that contained streptococci. It is questionable whether in this case the fatal endocarditis was secondary to the otitis.

In another case, a little girl, while in the country had, for a few days, slight pain in the ear, with severe fever. Three weeks later the child was brought to the city, supposedly with typhoid fever. The blood test was negative, but the blood showed increased leucocytosis. Only then was the ear trouble recalled. Examination revealed inflammation of the attic. Incision evacuated pus with streptococci, and recovery was immediate.

In a third case, a child was taken ill with nausea and fever; six days later pain appeared in the right ear, and after two days more otorrhea. Pus contained streptococcus; blood examination showed leucocytosis. After four days' treatment the otorrhea stopped and the

child seemed convalescent. Ten days later the child had another violent paroxysm of earache, with a temperature of 104.4°F. The tip of the mastoid showed tenderness. After politzerization there was slight discharge, which disappeared in twenty-four hours, together with all the other ear symptoms. Six days later the child became restless, temperature 101°F. On examination the right ear was found normal, but the left membrane showed some congestion in the upper posterior region. During the night pain developed, on the following morning the redness deepened and extended, but there was no bulging. An incision was made, a drop of pus was emptied, which contained streptococcus, and recovery was prompt.

In conclusion, the writer urges that in all such cases of infection, with general symptoms, the ear should be included in the routine examination, whether there is loss of hearing and earache or not. Especially should this advice be heeded in children practice.

Chronic Empyema of the Antrum Highmori.

A. G. Wippern (*Medical News*, November 9, 1901) reports three cases of chronic empyema of the antrum Highmori cured with nargol injections. All his cases were previously treated through the alveola of the second bicuspid, without results. One case of six years' standing was curetted by the writer through the canine fossa, packed with iodoform gauze, and irrigated with different antiseptics and astringents. This treatment was kept up for a month with but slight improvement. Finally, he tried one-quarter of one per cent of nargol for irrigation, of which a quart was used three times a week, and after three months the patient was discharged as perfectly cured. Similar results he had with his two other cases, one of which had even several teeth extracted in a vain search for relief from neuralgic attacks.

PATHOLOGY AND BACTERIOLOGY.

In Charge of CARL FISCH, M.D.

The Genesis of Pulmonary Tuberculosis.

E. Ribbert (*Deutsche Med. Woch.*, No. 17, 1902). Although, contrary to the assertions of Ribbert, the gross of the pathologists have for some time back repudiated the frequency of the origin of pulmonary tuberculosis through inhalation of the bacilli into the lung, the

bacilli settling here directly and causing proliferation, the paper is valuable. It is impossible here to enter into any details; his observations concern a series of cases in which the typical course of chronic pulmonary tuberculosis could be traced back to a hematogenous infection. The merit of the paper lies in the fact that it demonstrates, that even in late stages of the disease evidence about the way of infection can be procured. However, we must not forget that the spreading of the tuberculous process from the primarily affected, calcareous or caseous bronchial glands or the origin of miliary tuberculosis from an intravascular focus has been for a long time a well-established fact.

About Emphysematous Gangrene and Its Etiology.

E. Fraenkel (*Zeitschr. f. Hygiene u. Infect. Krankheiten*, Vol LX, Heft 1. 1902) disputes the opinion of Grassberger and Schattenfroh, who maintain that the bacterium pronounced by Fraenkel as the cause of this disease, is identical with their granulo-bacillus, a close relation to the butyric acid bacillus. The bacillus capsulatus, however, differs from the latter by not producing spores in starch-agar and, above all, by always being pathogenic. Fraenkel's bacillus is identical with the bacillus aerogenes capsulatus described by Welch. Fraenkel asserts that his bacillus produces in the subcutaneous tissues of men and animals the typical phenomena of fulminant gangrene, while in the tissues after death only gas is produced, but no structural changes are caused. Both phenomena must be ascribed to the fact that the bacilli penetrate into the tissues during life. Microscopically, the pictures are very different in both cases. While, so far, all attempts at immunizing against this infection or at curing the established disease have been unsuccessful, Fraenkel's experiments on dogs make us believe that finally in this direction results may be hoped for.

The Technic of the Widal Reaction.

F. Pröscher (*Centralblat f. Bakteriologie*, Vol. XXXI, No. 9, 1902). In view of the inexact and unsatisfactory method that is generally used in making the agglutination test (dried blood, arbitrary dilutions, etc.), and in view of the incorrect ideas thus created about the specific quality of the reaction, this little paper should serve to inaugurate a more scientific and reliable way to utilize this test for clinical purposes. That with the method in vogue in our country it is im-

possible to obtain conclusive results (in spite of all of the modifications proposed) every bacteriologist must acknowledge.

Pröscher uses small capillary tubes into which the blood is allowed to flow (0.1 cc. of serum being necessary for the test); the part of the tube containing the serum is detached and the serum expelled into a capillary pipette, measured and diluted with a stated quantity of salt solution. The bacillary suspension necessary is obtained by making a 24 hours bouillon culture of typhoid bacilli, to which 1 per cent formal is then added. Such a culture, after being allowed to settle for two days at 37°C., is decanted from the precipitate and kept in the ice box. It keeps ready for use for several weeks and needs only some shaking before being used. The culture and the serum dilution are mixed in varying proportions and the mixture poured into watch glasses and left in the incubator for one or two hours. After this time they are examined with a low power (50), when it is very easy to determine the presence or absence of agglutination. This very simple and accurate method should be widely followed, as with it the discussion about the value of the reaction would soon cease.

Contribution to the Knowledge of Hydrophobia in Man.

A. Krokiewicz (*Wiener Klin. Woch.*, No. 6, 1902). A woman, aged 20 years, was bitten by a stray dog. Two and a half months later she noticed difficulty in swallowing and came under the author's attendance. She was at that time in the eighth month of pregnancy and died five days after the first symptoms had appeared. At autopsy pieces of the spinal cord of the mother and of the fetus were removed and emulsions made from them were injected subdurally into rabbits. The animals injected with the maternal emulsion died in due time of typical rabies, while those having received the material from the spinal cord of the fetus remained alive, showing that no transgression of the virus through the placenta had taken place.

That in this very interesting observation the virulence of the fetal spinal cord was not due to an absorption of antitoxin formed during the disease of the mother, is shown by the analogy of experiments on pregnant rabbits, that were inoculated with rabies-virus. The cords of the fetuses after death of the mother were harmless when injected subdurally into rabbits, but when injected together with some virulent cord allowed typical hydrophobia to develop.

Eberth Bacilli in the Sputum of Typhoid Patients.

L. Jehle (*Ibid.*, No. 9, 1902). From the examination of the sputum of twenty-three cases of typhoid fever and from that of the bronchial secretion obtained at fifteen autopsies of typhoid cases, the author draws the following conclusions:

1. In cases of typhoid complicated with pneumonia in the sputum and in the lung substance typhoid bacilli can frequently be demonstrated. The sputum in these cases is always hemorrhagic. The bacilli are found in pure culture or associated with other bacteria, especially with the Pfeiffer's bacillus of influenza.
2. Repeatedly during typhoid fever in clinically and anatomically uncomplicated cases of bronchitis typhoid bacilli could be found in the sputum. These bacilli can persist in the sputum for a long period after convalescence, so that careful disinfection of the sputum is indicated in the same way as that of the urine.

A New Reaction of Breast-Milk.

E. Moro and F. Hamburger (*Ibid.*, No. 5, 1902). Schlossmann asserted that lactoserum was precipitated by hydrocele fluid of young infants. The authors made experiments to control the correctness of this assertion and found:

1. That the fluid from any hydrocele is coagulated by the addition of a few drops of breast milk, and
2. That if to the fluid cow's milk is added, no coagulation appears.

This reaction, of course, has nothing to do with the precipitation of milk casein by lactoserum, but is simply and merely a typical coagulation, as is shown by the negative result in case to the hydrocele fluid ammonium oxalate (for decalcification) has been added. It is more probable that the reaction is due to a ferment (fibrin ferment) missing in cow's milk, the more so, since we also know that breast milk contains an intensely active diastatic ferment, which is not found in cow's milk. Hydrocele fluid represents a natural solution of fibrinogen. Against the fibrin ferment nature of the active principle speaks the fact that boiled breast-milk produces the same reaction (fibrin ferment destroyed by heating to 72-75°C.). A further study of this interesting phenomenon is looked for.

PEDIATRICS.

In Charge of M. J. LIPPE, M.D.

The Treatment of Summer Diarrhea.

Kerley, (*Archives of Pediatrics*, January, 1902) in all cases, empties the bowel of its contents, by the use of castor oil or calomel, and stops the ingestion of milk, for the reason that it supplies a most favorable putrefactive medium for the growth of pathogenic bacteria to which the illness is due.

As a substitute barley flour-water or rice-water is of value.

Albumen-water is no longer considered a good substiue.

The only drug of value is bismuth subnitrate, which in large doses, gives good results.

Opium must be used with care, and only given when the stools exceed eight in number in the twenty four hours ; three or four stools a day are necessary for drainage and a checking of this causes high temperature and other untoward symptoms.

If a heart stimulant is needed strychnin and strophanthus are used. Irrigation of the colon in cases having frequent stools only adds to the child's discomfort.

In appropriate cases two daily irrigations of the bowel with a normal salt solution do good.

In cases with a high temperature, a salt solution at 70°F. will act as an antipyretic ; in algid cases, (subnormal temperature) a solution at 110°F. will act as a powerful stimulant

The absorption of some of this solution by the intestine supplies fluid which many of these cases need badly.

The Etiology and Prophylaxis of Summer Diarrheas in Children.

Heiman (*Ibid.*, June, 1902) considers the following bacteria as specifically pathogenic under certain abnormal conditions :

1. *Bacillus coli communis*, (Escherich).
2. *Bacterium lactis aerogenes*. (Escherich).
3. Certain staphylococci and virulent forms of streptococci, (Escherich, Hirsh and Libman).
4. Lesage and Hayem have described a pathogenic micro-organism which infests the intestinal canal and causes green stools.

5. Flügge claims, that certain saprophytic bacteria have distinct pathogenic properties, acting upon the proteids to form toxic products which cause diarrheas.

6. Baginsky describes a chromogenic and a non chromogenic variety, causing acid diarrheas.

7. Booker isolated many varieties of bacteria from the dejecta of infants affected with summer diarrhea.

8. *Proteus vulgaris* (Hauser), which is at times virulent; but usually non pathogenic.

The following is a good classification of the diarrheas of summer:

1. Infectious.
2. Non-infectious.

The first may be sub-divided in (*a*) inflammatory, that is, with a lesion of the mucous membrane; (*b*) non-inflammatory in which there is no lesion of the mucous membrane.

A lowered vitality, or pre existing catarrhal condition of stomach or bowels brought by heat and humidity are predisposing factors.

In breast-fed children, dietary indiscretions of the mother; uncleanliness of her nipples and breast, uncleanliness of the infant's mouth, and over-feeding produce diarrheas.

In bottle-fed children an excess of proteids and fat are the usual causes of diarrheas.

In children fed on a mixed diet, the feeding of unripened and decayed fruit is a common cause of diarrheas.

Prophylaxis.—Pure milk is of prime importance. In the so-called "milk laboratories," we to-day have excellent facilities for obtaining pure milk.

A reduction in the amount of the daily allowance in summer, and feeding boiled water and cereals will reduce the number of cases of summer diarrhea.

Slight gastric and enteric ailments should be attended to at once.

The importance of fresh air, healthy hygienic surroundings and cleanliness of body can not be overestimated.

Diabetes Mellitus in a Child Four Years Old.

Stern (*Ibid.*, June, 1902) records such a case, which showed marked improvement, under a strict diet, antipyrin, codein and sodium pyrophosphate.

A Case of Exophthalmic Goiter.

Variot (*Gaz. des Med. Inf.*, Vol. IV., No. 3) reports a case of exophthalmic goiter, with the three-typical symptoms, in a boy four and one-half years of age, following a severe attack of pertussis. The exophthalmos was very marked, and both the pupils were dilated; Graefe's sign was absent; the thyroid was enlarged; the pulse raised from 152 to 168 per minute. Thyroid and tonic treatment brought about marked improvement.

SURGERY.

In Charge of

A. V. L. BROKAW, M.D., and E. C. GRIM, M.D.

Clinical Observations on the Surgery of the Gall-Bladder.

Albert J. Ochsner, of Chicago, (*Annals of Surgery*, June, 1902) in his paper, considers an interference with the drainage of the gall-bladder a most important factor in the causation of gall stone. Appendicitis and typhoid fever also play an important rôle. Cushing has found that 30 per cent of the gall stone patients operated at Johns Hopkins Hospital has previously suffered from typhoid fever, and the author found that more than 35 per cent of his cases suffered from acute or chronic appendicitis. The following are observation on the 48 tabulated cases cases operated during 1901.

A study of this table shows a number of facts which are worth bearing in mind. The points to which I wish to direct attention especially refer:

1. To the sex of the patient, there being 37 women and 11 men in this table.
2. To the age, only one of the patients being less than 30 years of age at the time of admission, although a large number of these patients refer the beginning of their symptoms back to the age between 20 and 30 years.
3. I have noticed that a large proportion—37 out of 48, in fact, nearly 80 per cent of these patients, complained especially of digestive disturbances, and that all of them had been treated by a number of physicians for gastritis.
4. One-half the number of these patients have never suffered from distinct biliary colic, and of those who had suffered from these

paroxysms, one-half had been looked upon as suffering from gastralgia.

5. Only a small proportion of these cases has been severely jaundiced at any time—12 cases, or 25 per cent, and in more than one-half of the number—25 cases, no jaundice had ever been observed; hence, the two symptoms upon which so much stress has always been laid in the diagnosis of gall-stones have been absent in by far the greater number of these cases. The third classical sign, the passage of the gall-stones in the feces, was absent in all but a few of these cases. I believe, consequently, that it will be necessary to change the diagnosis entirely, because the old plan must continue to result in wrong diagnosis.

Dr. Ochsner considers carcinoma a complication of gall-stones, and states that in cases of primary carcinoma of the gall-bladder he has always been able to get a history of gall-stones, dating back many years, and he has invariably found these present in the gall-bladder in those cases at the time of the operation or autopsy.

The author's treatment is hygienic, diatetic and medical, and for all cases that can not be relieved in this way with any degree of permanency and for those who are unwilling to undergo this continuous treatment for the sake of securing relief of the paroxysms without being relieved of their gall-stones, nothing remains but extirpation and removal of the stones.

A record of fatal cases is given in the paper and the cause of death, and the following conclusions are drawn from them:

1. The diagnosis of disease of the gall-bladder and of gall-stones requires further study and observation.
2. The classical symptoms must be supplemented in order to be sufficient as a basis for diagnosis.
3. It is not wise to operate during the acute attack of cholecystitis.
4. Patients much reduced by long-continued suffering do not bear well prolonged operations upon the gall bladder and ducts.
5. Robson's observation that patients with carcinoma of intra-abdominal organs do not bear gall-bladder operations well has been borne out by experience.
6. If the operation can not be postponed in presence of extreme jaundice, it should be confined to simple drainage of the gall bladder.

In conclusion, I will say that these cases have served to strengthen my regard for the foregoing conclusions.

Fracture of the Base of the Fifth Metatarsal Bone by Indirect Violence.

Robert Jones, of Liverpool, (*Ibid.*, June, 1902) reports six cases of fracture of the base of the fifth metatarsal bone by direct violence, and gives an x-ray of each. In his cases the fracture was caused by suddenly throwing the weight on the outer side of the foot with the heel raised. Owing to the anatomical structure, the line of fracture was from without toward the interosseous ligament. The peculiar symptoms are, absence of crepitation and displacement, pain on raising on tip-toe, and tenderness and swelling over the site of fracture.

Carbolic Acid in the Treatment of Hydrocele.

Regdon (*International Journal of Surgery*, July, 1902) said that he had used carbolic acid exclusively in the treatment of hydrocele for the last ten years. The results, with one exception, were invariably good. The injection of carbolic acid gives little pain and the reaction is comparatively mild. He reports one case in which an operation had to be done on account of gangrene following the injection of carbolic acid.

A Rare Fracture.

EcLean (*American Medicine*, June, 1902) reports a case of fracture of the descending ramus of the pubis and ramus of the ischium. The accident was caused by the foot slipping suddenly outward, when the patient heard a snap. He walked several blocks and went home. About six months later a piece of bone was removed at site of injury.

Cardiac Paralysis by Chloroform.

Laqueur (*Deutsche Med. Woch.*, No. 6, 1902) lost a boy, aged 14 years, during chloroform anesthesia before the beginning of operation. At the necropsy the signs of lymphatism were found; the thymus was much enlarged, the glands of the neck and spleen were hypertrophid. He concludes that hyperplasia of the thymus should be suspected when the glands of the neck, tonsils and spleen are enlarged.

BOOK REVIEWS.

Text-Book of Physiological and Pathological Chemistry. By

G. Bunge, professor of physiological chemistry at Bale. Second English edition. Translated from the fourth German edition by Florence A. Starling and edited by E. H. Starling, M.D., F.R.S., professor of physiology in the University College, London. Price, \$3.00, net. P. Blakiston's Son & Co., Philadelphia. 1902.

Who has not heard of Bunge? His chemical theories pervade all the fundamental principles of medicine. He and his teacher, Schmiedeberg, have for many years experimented on the activities of living matter, and their teachings have profoundly influenced the science of medicine. The writer, familiar with Bunge's work in the original German, can state that his style is delightfully easy, fluent and concise. The translators have been very fortunate in retaining much of this elegance. It is a scientific work, written in a style which reads like a novel. You pick it up, you soon become absorbed, and you will not lay it down until you have read through the whole of it. Then you will wake up refreshed, feeling that you have been greatly benefitted, and realizing that you have advanced in the basic theories of medicine.

It was Bunge who first insisted that the human body obtains its iron from organic compounds, and that inorganic iron is non-assimilable. Although this last has been partly disproven, the chapter on the iron of the human body is one of the most instructive of the work.

Bunge is a philosopher and chemist. He rigidly holds that ordinary chemical and physical phenomena do not, and can not, explain all of life. The following is one of his characteristic declarations: "I think the more thoroughly and conscientiously we endeavor to study biological problems, the more are we convinced that even those processes which we have already regarded as explicable by chemical and physical laws, are in reality infinitely more complex, and at present defy any attempt at a mechanical explanation."

We are convinced that this book should be read by every practic-

ing physician. He will enjoy it, find profound truths revealed in a clear and concise way, and discover that what is ordinarily regarded as a difficult subject, is really easily digested.

The Practical Medicine Series of Year Books, Comprising ten volumes on the year's progress in medicine and surgery, issued monthly. Under the general editorial charge of Gustavus P. Head, M.D., professor of laryngology and rhinology, Chicago Post-Graduate Medical School. The Year Book Publishers, 40 Dearborn street, Chicago. Price, for the Series, \$7.50.

Volume V.—General Medicine. Edited by Frank Billings, M.D., with the collaboration of S. C. Stanton, M.D. May, 1902. Price, \$1.50.

This volume contains recent literature on typhoid fever, malaria and other fevers; also diseases of the liver, pancreas, esophagus, stomach and intestines. Articles on trichinosis, filariasis, actinomycosis, glanders, mumps and sunstroke complete the volume.

A Brief Manual of Prescription Writing, in Latin or English, for the use of physicians, pharmacists, and medical and pharmaceutical students. By M. L. Neff, A.M., M.D. F. A. Davis Company, Philadelphia.

This book contains the essentials of Latin which is used in writing prescriptions, with a vocabulary of the principal Latin words employed.

A System of Physiologic Therapeutics. A practical exposition of the methods, other than drug-giving, useful in the prevention of disease and in the treatment of the sick. By Solomon Solis Cohn, A.M., M.D., professor of medicine and therapeutics in the Philadelphia Polyclinic, etc. P. Blakiston's Son & Co., Philadelphia. 1902.

Volume IX.—Hydrotherapy, Thermotherapy, Heliotherapy and Phototherapy. By Dr. Wilhelm Winternitz, professor of clinical medicine in the University of Vienna; assisted by Dr. Alvis Stasser, instructor in clinical medicine at the University of Vienna, and Dr. B. Buxbaum, chief physician of the Hydrotherapeutic Institute in Vienna. Balneology and Crounotherapy. By Dr. E. Heinrich Kisch, professor in the University of Prague, etc. Translated by Augustus A. Eshner, M.D., with notes by Guy Hinsdale, A.M., M.D. Illustrated.

The importance of the subjects discussed in this volume need not be emphasized; hydrotherapy has an abiding place in all scientific

medicine, while heliotherapy and phototherapy are coming into such prominence as to deserve the most careful consideration by the thoughtful practitioner.

Dr. Winternitz is the world-wide recognized authority on the subject of water cures, hence his work deserves the most careful scrutiny and can be regarded as eminently trustworthy, but his own writings extends over only fifty pages; consequently, the work should not be regarded as one of Winternitz'. His assistant, Dr. Strasser, is given the credit for writing the technic of hydrotherapy, covering sixty pages. Dr. Buxbaum writes on special hydrotherapy, amounting to eighty pages. The writings of these authors had to be supplemented, since a perusal will show that many important parts of the subject are omitted.

Dr. J. H. Kellogg, of Battle Creek, Michigan, writes interestingly on balneotherapy, photherapy and thermotherapy, covering about seventy pages.

Dr. Harvey Cushing contributes a chapter on saline irrigations and infusions.

Dr. Albert C. Peale has written the introductory chapter on balneology and crounotherapy, giving the classifications of mineral waters, with especial reference to those of the United States.

Professor Kisch thoroughly discusses the principles and practice of the various uses of mineral waters—as bath and drink. In this part the average practitioner will find much instruction.

Of great practical value for study and reference is that part dealing with the balneotherapeutic and crounotherapeutic indications for the individual forms of chronic disease.

The general high character of the work is continued in the ninth volume.

Lumbar Puncture for Syphilitic Headache.—Milian, Cruzon and Paris have found that lumbar puncture affords great relief for the severe headaches of syphilis. They found in eight cases a distinct degree of hypertension of the fluid. Widal states that the finding in such punctures of a lymphocytosis indicated the necessity of the most careful examination of the nervous system. Serious disturbances will often be found that have passed, unsuspected.

NOTES AND ITEMS.

The American Medical Association.—The fifty third annual meeting of the American Medical Association, held at Saratoga Springs, New York, June 10—13, 1902, surpassed all former meetings in the importance of work accomplished. The meeting was the first under the plan of re-organization in which the House of Delegates have charge of all non scientific business. Apparently the new organization has added great strength to the Association. A committee on revision of the Code of Ethics was appointed, which will report next year.

In his opening address, Dr. Wyeth, President of the Association, urged that the Code be revised, and called attention to certain inconsistencies in the present form.

The next place of meeting, 1903, will be New Orleans. The new officers of the Association are as follows :

Dr. Frank Billings, of Chicago, President; Dr. J. H. Witherspoon, of Nashville, Tenn., First Vice-President; Dr. H. P. Newman, Treasurer; Dr. George H. Simmons, Secretary.

American Association of Orificial Surgeons.—The fifteenth annual meeting of the American Association of Orificial Surgeons will be held in Chicago, September 10 and 11, 1902. A program is being made up of lectures and papers by the leading specialists and practitioners in rectal, genito-urinary and gynecological work, and in the treatment of all chronic diseases. The orificial surgeons are the workers in the great field of the reflexes and the profession generally is every day being brought closer to a realization of the fact that the reflexes play a most important part in the chronic manifestations of disease. Papers and discussions will cover the entire scope of the work, preparatory, operative and therapeutic, and the sessions will be of great benefit to all who attend. Dr. H. C. Aldrich, of Minneapolis, Minn., President; Dr. Ralph St. J. Perry, Farmington, Minn., Secretary.

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ORIGINAL CONTRIBUTIONS.

Robert Willan and Dermatology.

By W. A. HARDAWAY, M.D., LL.D.,

ST. LOUIS, MO.,

PROFESSOR OF DISEASES OF THE SKIN AND SYPHILIS, WASHINGTON UNIVERSITY;
EX-PRESIDENT OF THE AMERICAN DERMATOLOGICAL
ASSOCIATION.

IN the organization of a society for the study of skin diseases in this city, we have agreed to give it a name that shall recall to our minds the scientific labors of one of the greatest dermatologists of past times, a man whose influence, even after the lapse of nearly a century, is still felt and acknowledged.

Therefore, on the threshold of our work, I thought it might interest you to say something of Robert Willan and his life, and then briefly to pass in review the history of dermatology up to the beginning of the Twentieth Century. Of course, under the circumstances this can be done only in the barest outline.

Robert Willan was born at Hill, in Yorkshire, November 12, 1757. His father, a Quaker, was also a physician. The

The Presidential Address at the First Meeting of the Willan Dermatological Club of St. Louis.

Society of Friends has given a number of illustrious names to English medicine, one of the most illustrious being, I believe, one of our own colleagues. Willan was educated at the Sedberg Grammar School, near his home, and afterwards pursued his medical studies at Edinburgh, where he graduated in 1780. He settled in practice at Darlington, during which time he wrote a small tract (1782) on the "Sulphur Waters of Croft." So, thus early, he began his literary career, which he continued, writing on a variety of medical and religious subjects, until the end of his too short life.

After a brief stay at Darlington, Willan removed to London and was appointed physician to the Public Dispensary on its establishment in 1783. He resigned this appointment in 1803, whereupon he was made consulting physician and received other evidences of the esteem in which he was held. While connected with the Dispensary his teaching attracted many pupils, some of whom afterwards established high reputations for themselves.

Willan was admitted a licentiate of the Royal College of Physicians in 1785, a fellow of the Society of Antiquaries in 1791 and a Fellow of the Royal Society in 1809. In 1810 his health failed, symptoms of tuberculosis developed, and he left London for Madeira in the hope that he might be benefited by a warmer climate. The wished-for improvement did not occur, however, and he died there on April 12, 1812.

As early as 1788 Willan had begun to occupy himself with the studies that have made his name famous, seeking out especially the proper acceptation of all the Greek, Roman and Arabic terms relating to skin diseases. His classification and nomenclature was laid before the Medical Society of London in 1790, and it was received with so much appreciation as to be awarded the Fothergillian gold medal.

It is a common fact of observation that medicine merely reflects the state of that general science of which it is a department; this is clearly shown in the study of the scientific opinions of the Eighteenth Century. Although gradually emerging from the darkness men were still held in the bonds of abstract theory and speculation, and nowhere was this more discernible than in medicine. As Payne well observes, the characteristic of the modern school, which had its beginnings in this century, is the adoption in medicine of the methods that prevail in the physical sciences, and the gradual disap-

pearance of unwarranted speculation; hypotheses, though not neglected, being used as means of research rather than as ultimate conclusions.

In cutaneous medicine, theory and crude speculation had literally run riot, and it is Willan's peculiar distinction that being an intellectual disciple of Sydenham he had applied his natural-history method to diseases of the skin, with the result of placing their study on a sound and satisfactory basis. Neumann says that Robert Willan's work makes, without doubt, the greatest epoch in the history of cutaneous medicine, both as to nomenclature and treatment of skin diseases, and also in a knowledge of the labors of his predecessors. Moreover, he described individual diseases with rare skill, and greatly simplified and improved the therapeutics of his day. I look upon Willan as one of those rare men that occasionally arise with a genius for synthesis—men who see things round and whole and not disjointed. Hebra was another such, and to-day we are patiently waiting for a medical Darwin who can weld together the many brilliant though disconnected achievements of modern research.

It may be truly said that dermatology, as we know it, began with Willan, and that while we may no longer regard his natural system of classification as adapted to our views and necessities, yet, in its day, it served its purpose, and its usefulness is by no means exhausted. Perhaps, as often happens, his nomenclature was more useful than his classification, seeing that a perfect system of classification is impossible, as it implies the completion of all knowledge.

In England the influence of Willan was very great in directing attention to dermatology as a very important branch of medicine. While there has never been, in a strict sense, an English School of Dermatology, many of the most able men have occupied themselves with diseases of the skin.

Starting with Thomas Bateman, the pupil of Willan, we find the names of Plumbe, Green, A. T. Thompson, Neligan, E. Wilson, Hillier and Tilbury Fox among the systematic writers (I do not include the living), but also such names as Gull, William Jenner, Addison, Paget, Fagge, Startin and Buchanan Baxter among those who have added materially to our knowledge in special directions.

I have always thought that the great talents of Erasmus Wilson were never sufficiently appreciated by the present gener-

ation of dermatologists. Wilson was a sad pedant and he wrote too much; moreover, he had the misfortune to be a contemporary of Hebra. But, although as a systematic writer he was prolix and wearisome, as a clinical observer he was unexcelled and left us a rich legacy of accurate observations. Tilbury Fox, with his enthusiasm and vast industry, also accomplished much in his day, and in addition to the well-known affections first described by him, I think we have failed to give him due credit for his masterly study of the disease now known as dermatitis herpetiformis, although in saying this I am not forgetting for a moment that what he left fragmentary and incomplete was extended and perfected by the genius of Duhring.

I have stopped to mention these men because they were the direct intellectual descendants of Willan, but as interesting as the field is I must hasten to leave it for fear of exhausting your time and patience.

I shall only say that subsequent to Willan the most prominent workers in other countries were for France—Alibert, Cazenave, Schedel, Biett, Gibert, Rayer, Bazin, Ricord and Hardy; for Germany—J. Frank, Struve, Behrend, Peter Frank, Veiel, Fuchs, G. Simon, Schönlein, Bärensprung and, especially and prominently, Hebra, and his many pupils.

Turning now aside from men and omitting for the most part, the famous workers of our own day, let us glance briefly at dermatology as illustrated by ideas and principles.

In the earlier part of the century, influenced no doubt by what was going on in the so-called natural sciences, dermatologists occupied themselves principally with schemes of classifications and details of nomenclature, although clinical observation was by no means neglected, but it was not until the middle of the century that diseases of the skin began to be studied from the standpoint of pathological anatomy. While Hebra himself was not especially a pathologist, influenced by Rokitansky his classification was pathologico-anatomical in character, and besides the enormous debt we owe to him in a clinical and therapeutical way, it may justly be said that the impulse given to the microscopical study of skin diseases was due to his influence and teaching. How fruitful the microscope has been for the better understanding of cutaneous maladies needs only to be mentioned to you. (It may be referred to parenthetically that three Americans, then in Vienna,

Haight, Derby and Geddings, were among the first to enter this field under Hebra's guidance).

To-day we are in the midst of another epoch in dermatology—the epoch of bacteriology, which really may be said to have commenced, if we broaden the term somewhat, with the discovery of the achorion of Favus by Schölein in 1839, to be followed by the discovery of other fungi by Malmsten, Bazin, Körner, Meisner and Eichstedt. In this department we are indebted, in recent years, to the brilliant researches of Sabouraud, and in still another field I can not omit mention of Gilchrist. But what occupies our attention largely to-day, are what may be called the bacteria proper. Galloway arranges them in certain groups, as follows:

1. Organisms that find an accidental lodgment on the skin.
2. Organisms that are capable of leading a saprophytic existence on the surface, but do not produce definite pathological results, and
3. Organisms that are known to be definitely pathogenetic.

In regard to the last class we have but to mention the micro-organisms concerned in tuberculosis, lepra, rhinoscleroma, etc., to recall to your minds how far away we are from the days of Willan.

That the germ theory of disease as applied in a practical way to dermatology will lead ultimately to results which we can now barely appreciate, I feel perfectly confident; but, unfortunately, just now it is being pushed with more zeal than judgment. This condition of affairs will soon, however, correct itself.

The final aim of the science and art of medicine is the cure or amelioration of disease, and in the face of the brilliant achievements of the last half century, we must naturally ask ourselves, are we any nearer this goal than before, particularly in dermatology? I am optimist enough to think that we are vastly nearer. Even in such diseases as lupus vulgaris and cutaneous cancer the treatment by the method of Finsen and the x-ray has helped to remove these maladies from the list of incurable disorders. The proper conception of the rôle of the pus cocci on the skin has been exceedingly fruitful in an etiological and therapeutical way; and, of course, the long-antecedent discovery of the part played by animal and vegeta-

ble parasites in the production of dermatoses opened up new avenues of treatment.

In the local management of many of the inflammatory diseases of the skin, in spite of the great multiplication of pastes, plasters and gelatins, we are only a little better off than with the methods and measures of Hebra, and let me in gratitude add, the elder Startin, with his excellent compound zinc lotion. At the same time I must mention with sincere appreciation the gain of such remedies as resorcin, chrysarobin (Squire), salicylic acid, pyrogallol, iodoform and its like, ichthyol, etc., and not omitting the extension of the use of sulphur, which latter we owe to Unna's masterly conception of the seborrheal process.

Of very late years the general treatment of skin diseases has made no great progress; serum-therapy and organo-therapy have not come up to expectations. But it is a little startling to recall that Wallace introduced the iodid of potassium into practical use only so far back as 1832. The method of hypodermic medication in syphilis and other disorders is relatively modern. It is also important to remark that with the increase in the number of remedies employed in disease has also arisen a knowledge of their untoward effects, and nowhere are such effects more frequently manifested than on the skin.

Of course, the surgery of the skin has advanced equally with general surgery. It is probable that the x-ray will supersede many of the minor surgical methods hitherto employed, but I believe that electrolysis will long continue to have a special utility.

In making this hasty and quite inadequate review of the more prominent men and some of the striking events in the history of dermatology since Willan's time, I have mentioned only here and there the names of a few of the many able masters of our specialty now living. No one is more sensible of their merits than I am, but the scope of this address does not admit of further detail.

Finally, then, in looking back over the past ninety-odd years, we can have no difficulty in appreciating the really remarkable advances in our knowledge of diseases of the skin, and I think we shall commit no error in giving much of the credit to Robert Willan, who in the beginning laid the foundations of dermatology so wisely and well.

Conditions I Have Found in Operating for the Radical Cure of Oblique Inguinal Hernia.

By FRANCIS REDER, M.D.,

ST. LOUIS, MO.

ONE of the greatest triumphs in surgery of the present day is the success attained in plastic surgery. In performing a plastic operation we seek to reproduce the natural construction of the parts. The operation for the radical cure of oblique inguinal hernia is a plastic.

Inasmuch as the existence of hernial protrusion is very common and as the complaint is one that exposes the individual to danger and annoyance, it is not surprising that it has claimed and received so large a share of professional attention. For more than two thousand years attempts have been made, either by operation or by the application of some device, to prevent the descent of the intestine into the inguinal canal.

Singular as it may seem it is not fifteen years since an operation has been advocated that has given satisfactory results relative to a reasonable expectation of a cure.

From a very laudable desire to investigate the anatomical relations of a tumor which involves parts of such vital consequence, the examination of the structures connected with hernia has been conducted with a degree of minuteness that has hardly left any shred or portion of the tissue concerned, without a name.

The anxiety has been shown to individualize tissues that in other parts of the body were scarcely noted. This has had the tendency to cloud the chapter on hernia to the average student. At the end of his college course the student interested in anatomy took up this chapter as a special study.

The abdomen being a closed cavity which is accurately filled by its contents, the different tissues which enter into the composition of its parietes naturally sustain an amount of pressure which varies according to circumstances. As the natural tendency of gravity is to cause the abdominal contents

to press against the anterior parietes of the abdomen when in the erect position, and as many weak points exist in them for the transmission of the various organs, this region is by far the most common seat of hernia.

A condition in the inguinal region inviting hernial tendencies is traceable to three depressions: An internal, a middle and external one, formed by the urachus, the obliterated hypogastric artery and the deep epigastric artery. It is the internal fossa, formed internally by the ridge of the deep epigastric, below by Poupart's ligament, externally smoothening out into the general peritoneum, whose significance in the predisposition to rupture becomes apparent by having its deepest point immediately over the internal orifice.

Furthermore, there is an important element in the manner in which the constituents of the cord converge at the internal ring. The vas deferens coming from the pelvic cavity inside to the internal ring, meets and unites with the spermatic vessels descending from the lumbar region above the ring, forming a V-shaped figure, with the apex toward the ring. We have here, no doubt, an arrangement that may incline a loop of intestine toward the internal orifice.

The greatest causative factor, however, to the predisposition in the development of hernia is a structural weakness of the tissues involved in the descent of the testicle. When the testicle of the fetus leaves the loins in its descent to the scrotum it pushes before it that portion of the peritoneal sac which lies in front of the intestine. Preceded by this small pouch of peritoneum, it next extends a portion of the extraperitoneal fascia (fascia transversalis), then a few fibers of the transversalis muscle, with a few fibers of the internal oblique, the two together constituting the cremaster muscle. (This layer becomes greatly hypertrophied in old scrotal hernias). Passing through a slit in the aponeurosis of the external oblique muscle (external abdominal ring) it extends a portion of the cellular tissue, known as the external spermatic fascia, which is between the sides of the ring and the fascia superficialis, and, lastly, drops into the pouch of skin known as the scrotum.

When in the scrotum this gland is, therefore, covered by the skin, superficial fascia, cremaster muscle, condensed cellular tissue (tunica vaginalis communis) and by the peritoneum (tunica vaginalis testis). The cord has the epigastric artery

between the linea alba and the line of descent (inguinal canal).

Shortly after taking its position in the scrotum, the tube-like process of peritoneum, which then extends from the scrotum to the abdomen, is obliterated, though sometimes it remains open (congenital hernia—hydrocele of the cord) or is closed at points—encysted hydrocele, hydrocele of the cord. The process of fascia transversalis (extraperitoneal cellular tissue) which has been protruded into a pouch like the peritoneum, but contracted in a tube-like prolongation on the cord, is then generally changed and loses its dense characters, except on the surface next to the peritoneum where it presents as a funnel-shaped depression at and around the cord, infundibuliform fascia, whilst the remaining layers contract upon the cord and are diminished in character and distinctness.

A portion of intestine or omentum pressing against the peritoneum at the same point of the abdominal wall does the same thing as the testicle did, *i.e.*, pushes a portion of the peritoneum in advance of it: On reaching the fascia transversalis it also slightly distends it into a sort of pouch. This fascia becomes known as the fascia propria.

Then the tumor in passing on takes a position in front of the cord, and a little toward the median line of the body. Being here beneath the fibers of the transversalis and the internal oblique muscles (cremaster), it escapes through the opening in the tendon of the external oblique muscle (external abdominal ring), presses before it the cellular tissue which usually fills up this ring (internal columnar fascia, external spermatic fascia), and pressing against the superficial fascia, the two become blended in one and there only remains the additional covering of the skin. In operating upon an inguinal hernia there is, therefore, usually found the skin, superficial fascia, cremaster muscle, fascia propria and sac, all of which must be divided before the contents of the tumor can be made apparent.

From these anatomical relations we can readily see that the union about the ring, canal and cord is not a strong one. We remember that the internal abdominal ring is situated in the transversalis fascia midway between the anterior superior spine of the ilium and the spine of the pubes, about a half inch above Poupart's ligament; that it is oval in shape and that the extremities of the oval are directed upward and downward, and

that the ring is reinforced by the common fibers of the transversalis and the internal oblique which arise from Poupart's ligament, arch over the cord and pass on as the conjoined tendon to be attached to the linea ilio-pectinealis.

The external abdominal ring is a slit, a triangular interval, about one inch long and half an inch wide in the aponeurosis of the external oblique. It is just above to the outer side of the crest of the pubes. The ring is strengthened above by a series of intercolumnar fibers. Normally the distance between the two rings is one and a half inches. The space is known as the inguinal or spermatic canal. This is in reality not a canal but a flattened passage in the abdominal wall.

Intra-abdominal pressure may cause the distance of the rings to be decreased, a condition favorable for the development of hernia.

The cord mass which plays so important a part in inguinal herniotomies, consists of the elongated pedicle of the testicle, known as the spermatic cord, extending from the internal inguinal ring along the canal into the scrotum to the top of the testicle. Other structures are the vas deferens and its vessels, the spermatic artery and pampiniform plexus, sympathetic nerves, numerous lymphatics, scattered fibers of the cremaster muscle, fat and connective tissue. The whole frequently presents a mass so closely woven together that the operator may experience considerable difficulty in his work.

In speaking of a radical cure for this form of hernia we probably do so because the results obtained by our present methods of operating have been so very encouraging in the majority of cases that the operation is looked upon as a curative one. The person, however, who has been successfully operated upon must bear in mind that he has a patched-up boiler and inasmuch as a rupture took place when his belly was in an apparently good condition, it does not insure him against a recurrence of a similar trouble, even after a cure.

In performing the operation for radical cure I have followed the technic as described by Bassini, of Padua. It has been to me always a question why modern herniotomy, as practiced in this country, should be designated by the name of a foreign operator. If I do not err, I believe that Marcy has given to the profession surgical points for this operation bearing a strong similarity to those of Bassini a number of years before we heard of the Bassini operation.

The principle object in the operation for radical cure is to imitate and reproduce Nature's plan of construction. Parts of identical structures must be coapted and must be maintained in apposition a sufficient length of time to allow the preliminary stages of repair to pass over into a thorough blending of the parts.

The material used to secure coaptation must be so applied as to restrain the parts without disturbing the nutrition and not interfere with repair.

The selecting of suture material is manifestly an element of first importance. It has been a great practical difficulty to secure a material of trustworthy character which will maintain its integrity sufficiently long to hold in coaptation the divided structures and finally disappear by absorption, leaving in its place a vitalized band of connective tissue.

In my earlier operations I used silk boiled in glycerin. If silk were absorbable it would be an ideal suture material. In several of my cases, after months of closure, a sinus formed over the site of a suture, which discharged so long as the silk ligature remained. Nothing is more irritating than just such a happening. An infected silk ligature is almost as bad as a prematurely-absorbed catgut suture. At present I am using chromicized catgut, or kangaroo tendon. The former I prefer to the latter because it is less bulky. My objection to chromicized catgut is its unreliability and the ease with which the knot unties itself when imbedded between moist surfaces. The untying of the knot, however, can be prevented by tying a third knot, and by not cutting the ends too short—leaving them fully a half inch long. The rapidity of the absorptive process depends greatly upon the blood supply of the part, the tissues in the inguinal region being largely of an aponeurotic nature and of low vitality, consequently absorption must be slower than in the more vascular parts.

A point of great importance in the operation is to tie the suture without tension. With catgut this can be done more readily than with silk. A silk suture once tied is fixed, it does not "give," whereas a catgut suture after being tied will yield some to the tension of the tissues, which it has grasped, after becoming softened by the tissue moisture.

It requires much practice to tie a suture properly in operations for radical cure. For this very reason Bassini used silk boiled in glycerin. Glycerin acts as a lubricant, and in tying

the knot there is so little friction, that when the desired resistance is obtained and discovered through the operator's tactile sense, the surgeon knows pretty accurately the degree of tension to which the tissues are subjected. A danger with silk is the liability of too severe a tension, causing a cutting into the tissues by the sutures, with consequent tissue necrosis from strangulation and danger of wound infection. The true function of a suture is to hold surfaces in apposition with as little tension as possible, until union shall occur by the formation of new tissues between the surfaces.

The steps to reconstruct the inguinal canal when it has been changed by hernial protrusion, according to Bassini, are these: An incision from four to six inches long, about one and a half inches above and parallel to Poupart's ligament is made through the skin. This cut exposes the aponeurosis of the external oblique muscle and the pillars of the external inguinal ring. All bleeding points are closed. The superficial epigastric vessels are divided near the middle of the incision.

By dividing the external abdominal ring and external oblique parallel to the coarse tendinous fibers of the aponeurosis the canal is laid open. Blunt dissection of the external oblique exposes the inner aspect of Poupart's ligament. The cord mass now comes into view and is raised also by blunt dissection. Lobules and excess of fat, strong fibers of the cremaster muscle and dilated veins are removed, care being taken that the principal vessels are not injured.

The next step is the isolating of the sac. This may be difficult and it may be easy. After being stripped from the cord the neck is detached from the internal ring by loosening the parietal peritoneum all around it. Much care is necessary in this procedure and the operator should be guided by the deep epigastric artery. When the artery can be seen or distinctly felt the peritoneum has been sufficiently detached. The artery lies internal to the inner margin of the internal ring. The sac is now opened at its fundus and thoroughly inspected. If not empty, it is to be freed from its contents. This is of great importance because the subsequent step consists in the ligation of the sac as high up as is possible. The portion of the sac external to the ligature is then removed. While the sac is being ligated at the neck, traction upon the sac is made to insure that no funnel or tubular process may remain leading

down into the repaired ring. The peritoneum, through its own elasticity, will retract the stump into the abdominal cavity. The method of removing the sac is by catching it with a hemostat, placing a silk ligature as high as possible about its neck and cutting off the sac just outside the clamp.

With this we enter upon the delicate part of the operation, the placing of the sutures. The cord is held outside the canal with a hook or a piece of silk ligature, clamped with an artery forceps to the gauze covering the abdomen. Beginning close to the pubic bone the deep sutures are placed. The first and even the second suture may include the rectus and its sheet, the tissues, however, that are always included are the transversalis and internal oblique muscles. The needle enters about a quarter of an inch from the margin, is carried across and underneath the cord to the shelving edge of Poupart's ligament and made to penetrate it from within outward. Four to six interrupted sutures are placed behind the cord. They are tied, beginning at the internal ring. The first one is tied in a manner that the tissues fit tightly around the cord and a forceps blade. This forceps blade is introduced as a precautionary measure, lest the suture may be drawn too tightly, and is removed after the suture is tied. The others follow in succession downward. With the placing of these sutures the length and obliquity of the canal is restored. It will also be seen that the object of the suture is not only to draw the muscular segment internally against Poupart's ligament, but somewhat behind it.

In this newly-made canal the cord is replaced and the divided aponeurosis of the external oblique muscle united over it. This is done with either a continuous or an interrupted suture. The new external abdominal ring is usually reinforced by one or two separate interrupted sutures. The skin is then closed, care being exercised that a perfect apposition of its edges is obtained. Drainage is seldom employed.

The dressing consists of moist sublimate compresses of gauze; over this a liberal quantity of cotton is placed and the whole enveloped in a bandage that will afford absolute rest.

It is well to either apply a plaster-of-Paris or starch bandage. On the eighth day the dressing is changed and if a non-absorbable suture material has been used to unite the skin it is removed at that time. No truss or support is recommended.

After four weeks the patient is permitted to go about, no limit to exercise being enjoined.

In speaking of the operation I beg to state that there are some radical operations that are performed with comparative ease and in a short time. All this, however, is influenced by the conditions as they present themselves, the manner in which the patient takes the anesthetic, complete relaxation being imperative, and the kind of assistance you have. The changes made by disease, the cellular structures, causes the tissues to become more developed, thickened and laminated. It gives them a fibrous appearance and frequently hinders the surgeon's progress greatly.

Long-continued pressure or inflammatory action may cause tissues, that under normal conditions are easily distinguishable, to become so blended and thickened, or to lose their ordinary character and position; being forced, as it were, into one, or they may have their laminæ so increased that nearly twice as many will be found over a hernia as might be looked for as the natural envelop of the parts.

When muscular fiber forms one of the layers covering a hernia there is less change observed in it than is the case with some of the other tissues. Its presence may, therefore, be generally told by its normal characteristics, and by these a distinction may readily be made of the different envelops of the tumor which otherwise it would be very difficult to recognize. The extraperitoneal and subcutaneous fascia, or the cellular tissue outside of the peritoneum and that underneath the skin, are sometimes so blended as to appear to the operator like a thickening of one and the same structure.

In operating I experienced little difficulty in carrying out Bassini's technic. I always endeavor to adhere to this method. In five cases, however, I availed myself of Halstead's excellent suggestion and placed the cord directly underneath the skin. These cases presented such a weakened state of the three principal layers—internal and external oblique and transversalis muscles, and the quantity of fat immediately underneath the skin was so great, that I felt convinced of a better result by placing the cord immediately underneath the skin.

A hernia operation is never lacking in interest. In one case, a lieutenant who had refused to join his regiment in the Philippines on account of a congenital inguinal hernia on the left side, I encountered great difficulty in finding the sac. The

contents of the sac had slipped back into the abdominal cavity. All efforts to cause them to protude failed. The sac was found by nicking with scissors a structure that could not be clearly defined. It proved to be the sac, in size about as large as a goose-quill.

In another case, where there seemed to be absolutely no doubt as to the existence of an inguinal rupture; all the signs and the history, presumably, giving no cause as to error, the true condition revealed at the operation was that of an encysted hydrocele of the cord. The hydrocele was about as large as a pigeon's egg, was readily reduceable and assumed all the characteristics of a hernia.

An operation that proved exceedingly trying was one for a scrotal hernia, left side, of twelve years' standing. The tumor was hard, as large as an orange and painful. It proved to be omental principally, with a knuckle of intestine resting upon the omental lump at the external ring. The adhesions were such that dissection was made with great difficulty. The omentum was tied off in sections and removed. When spread upon the table it measured nine by fourteen inches. There was a marked deposit of calcareous matter.

In freeing the sac I had the misfortune to sever the vas deferens; so many structures were encountered in the dissection that resembled the vas so closely that they were preserved until a better recognition could be obtained. Unfortunately, when the real structure was encountered it was recognized too late. A piece of chromicized catgut was introduced into the lumen of each end and with an interrupted silk suture a union was effected. An orchitis and epididymitis resulted, which was treated with an ice pack.

In two weeks all evidence of any inflammatory condition had disappeared. The wound in the inguinal region healed *per primam*.

Two years later I had occasion to examine this man. The cicatrix was perfect; there was not the slightest evidence of any recurrence, although he had been performing hard labor for over a year. As to the testicle, it was of normal size and consistency and gave him no pain. Coitus was carried out most satisfactorily, *i.e.*, not the slightest ache or pain in the left testicle. From this I made the inference that union of the ends of the vas deferens had taken place without material injury to the lumen.

Another case that left its impress forcibly upon my mind was that of an inguinal hernia on the right side; where the patient had recourse to a truss for five years. The pressure of this truss was very severe, and although it caused a marked pigmentation and hypertrophy of that part of the skin subjected to the pressure, yet the underlying tissues showed marked evidence of strong atrophy. The truss was not properly adjusted and exerted its pressure also upon the femoral region. The dissection revealed not only an inguinal hernia but also a femoral hernia, the latter undoubtedly caused by pressure atrophy induced by the truss. It gave the operation an unpromising aspect. An excellent result, however, was achieved. There was no evidence of recurrence fourteen months later.

A case that proved to me of much value was one in which the muscular structures were almost totally wanting. There seemed to be a fatty degeneration of these structures; the fat layer was unusually thick. The wound in this particular case became infected; there was no evidence of this condition until the eighth day, when the temperature rose from normal to 101° F. The wound, which had united, *i.e.*, the skin union only, was opened at the lower corner, about a half ounce of pus was discharged; a similar opening was made at the upper corner of the wound and a rubber drain inserted.

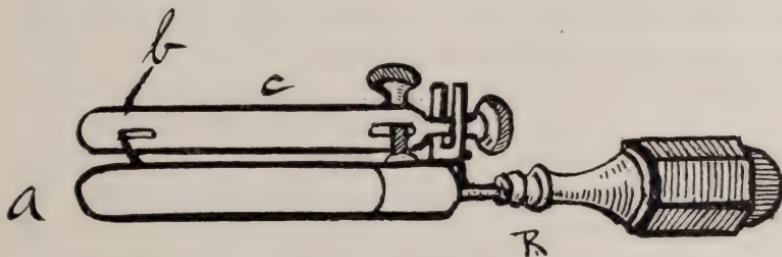
The following day, however, being much dissatisfied with the whole procedure, I removed the drain and opened up the wound in its entirety, even removing the sutures from the superficial tier. A moist sublimate gauze dressing was applied; the wound was dressed every day. Tincture of iodin was freely applied to the wound margin to excite a phagocytic action. The result was most satisfactory and fifteen days later there presented itself a granulating surface that tempted me to try to effect direct union. Under constant irrigation of bichlorid solution the wound was gently curetted with the sharp edge of a knife and the wound margins united by three mattress sutures, deeply placed. The little gaps in the skin were closed with simple sutures. The result was most gratifying; union took place without any further disturbance, giving me every reason to believe in a permanent cure of this case.

Another singular condition in a case was that of an hour-glass contraction. It was at first difficult to recognize the peculiarity of the sac, and only after it had been dissected out

completely did the true nature of the pouch become apparent.

Sometimes a very pretty picture of the anatomical relations of the hernial tissues is presented to view in those cases where the sac contents slipped back into the belly before the hernial sac has been definitely located.

I have in mind a case in which all the tissues of the cord mass were spread out and bled so that a gentle tension was put on all of them. In looking at these tissues in a manner so as to bear a good light opposite the sac with its very distinct contour was seen to lie between the layers of the tissue like the leaves of a plant placed between the leaves of a book. It thus becomes an easy matter to make the dissection.



Wutzer's invaginatorium for radical cure of inguinal hernia,
improved by Rothmund.

The instrument which I am pleased to present to you tonight is known as Wutzer's invaginatorium, modified by Rothmund. It was used by my father 50 years ago for the radical cure of inguinal hernia. The radical cure for hernia is not a new departure in surgery, it dates back many centuries, when Celsus, Heliodorus, Aetius, Guy de Chauliac and quite a number of other surgeons advised various means of accomplishing it.

The principle of the instrument is this: By its application it is expected to cause agglutination of the neck of the hernial sac by the excitation of inflammation in it, and the closure of the inguinal canal by the invigoration of the scrotum.

The procedure consists in introducing a plug of the scrotum into the inguinal canal, that is, after the patient is placed upon his back and the hernia reduced, by pushing the index finger up the canal as high as the internal ring.

The boxwood hollow cylinder (*a*) which is about four inches long, is well oiled and introduced in place of the finger,

the finger being withdrawn. Along the interior of this cylinder there is a flexible steel needle (*b*) attached by a movable handle; this needle is pushed so as to traverse the invaginated scrotum, the hernial sac and the anterior abdominal wall, through which its point is made to protrude. Next, the part of the instrument (*c*) is then passed over the projecting point of the needle and fixed by the other end by a screw apparatus to the cylinder (*a*) so as to compress the inclosed tissues. This completes the operation. The apparatus is allowed to remain for about eight days; by this time some discharge will have established itself. The instrument is then removed and the invaginated scrotal plug supported by a compress and spica bandage tightly applied. The patient is kept quiet for about two weeks, he is then allowed to move about and is instructed to wear a truss for about four months.

Report of Two Interesting Cases of Brain Injury.

By F. B. SHIELDS, M.D.,

VICTORIA, TEXAS.

THE first patient, M. C., a Mexican, aged 79 years, was assaulted on the night of November 2, 1901, with the but end of a shot-gun and a club, receiving thereby a compound comminuted complicated depressed fracture, involving portions of the frontal, parietal, temporal and occipital bones.

Beginning at the hair line, directly above the inner canthus of the right eye, the fracture extended backward parallel to the sagittal suture, to and into the occipital bone, curving downward and forward toward the mastoid process; forward from this point the fissure reached within one inch of the external angular process of the frontal bone, from thence its point of origin was gained. Within this space ($7 \times 3\frac{1}{4}$ inches in extent) the skull was comminuted and depressed.

When the patient arrived at the Valley View Hospital the classical symptoms of compression were present. Operation took place some four hours after the time of injury.

A horseshoe scalp incision was made, De Vilbiss trephine and rongeur forceps were employed, the fractured bone was removed, two large branches of the temporal ligated, immense clots were removed from the unruptured dura, the wound was thoroughly irrigated with warm sterile water, a gauze drain inserted, the scalp sutured with silkworm gut and the almost moribund patient removed to the adjoining surgical ward, where two liters of decinormal salt solution were given per rectum and 250 c.c. subcutaneously, besides other suitable stimulants.

Five hours later the nurse reported the bandages dyed crimson. In view of the fact that our patient had not yet rallied from the shock, reopening of the wound was decided against, and instead, a compress was placed over the anterior branch of the temporal artery, over this a tourniquet, by which means hemorrhage was quickly controlled. The patient began to revive under heroic doses of strychnin, atropin, nitro-glycerin, etc. Left-sided hemiplegia was now discovered.

The general condition gradually improved until the third day, when cerebral vomiting and pulse, incontinence of urine and feces, stertorous respiration, dilated pupils and cold, clammy sweats presented. The dressings were removed, also several sutures and enormous clots; the dura still appeared normal.

On the fifth day the temperature began to rise, and upon removal of the dressings, necrosis of the scalp and edges of the fracture was to be seen, the necrotic spots in the scalp were mopped with a strong silver solution and the bone was trimmed by means of the rongeur.

The patient began to grow comatose, pupils dilated widely, respiration very shallow, radial artery pulse less, muscles of deglutition became paralyzed, rectum refused to retain nourishment, and in this condition he remained eighteen hours despite the most powerful stimulants.

Toward the morning of the seventh day the color began to steal over our patient's face, the radial pulse again became perceptible and dram doses of milk could be swallowed.

On the eighth day, upon removal of the dressings, the dura was found boggy and bulging, into which an incision was made, evacuating some four or five ounces of straw-colored fluid. A gauze drain was inserted and the wound was redressed.

The sac was full again by the tenth day. The scalp ne-

rosis was spreading very rapidly, denuding the skull in some six or eight spots, the size of a half-dollar. Wild and furious delirium set in, rectal temperature 102 to 104° F., pulse 140 to 160, face flushed, eyes bright and glittering. Restraint now became necessary as the patient would savagely tear the bandages and gouge his fingers into the wound. Handcuffs and ropes were employed, ice bag to brain and the long list of hypnotic failed to soothe. Nothing short of restraint would suffice.

The wrists, from being constantly twisted and wrenched, fell heir to periosteal abscesses which necessitated incising and curetting.

Improvement took place very slowly, mania continued for twenty days, recovery, however, ultimately occurred and the patient was discharged on January 1, 1902.

The second patient, P. R., a Negro, aged 30 years, was injured on the night of December 11, 1901, receiving ten buckshot in the left half of his head, the wounds ranging within a space of 4×7 inches, the farthest to the front being immediately over the right orbit, while the hindmost one struck about three-quarters of an inch posterior to the mastoid process.

He was brought to my office, the scalp was shaved and cleansed and the wounds thoroughly asepticized. Dr. Crouse and myself, upon examination, found the pupils, pulse and respiration indicative simply of shock and the ten bullet wounds, from which bleeding had about ceased. Being unable to determine which bullets, if any, had penetrated the skull, it was decided to await further developments. The wounds were dressed and the patient sent home.

Six hours later the pulse, respiration and pupils were normal, loss of speech, and a right-sided hemiplegia involving the cheek, mouth, tongue, larynx, arm, hand, leg and foot, indicating either injury or pressure of that motor area situated in the left ascending frontal and the ascending parietal convolutions.

Thinking perhaps that some or all of this paralysis might be due to an absorbable clot, besides taking into consideration the unsanitary surroundings which are usually synonymous with a negro cabin, the operation was deferred.

Within twenty-four hours the function of deglutition had been recovered, facial and lingual anesthesia had disappeared

and the temperature, pulse, pupils and respiration became normal.

By the end of the third day the arm and leg anesthesia had diminished.

On the fourth day voluntary movement in the leg commenced and the arm and head wounds were doing nicely. On the evening of the seventh day the paralysis of the leg, foot and arm had practically disappeared, but the thumb and forefinger were still absolutely useless. The pulse suddenly shot up to 110 to 120 and the temperature to 100 to 102° F.

On the morning of the eighth day Drs. Crouse, Swain and myself decided to operate. The horseshoe scalp incision was made to include the ten wounds. Eight bullets were recovered from the scalp and two punctures of the cerebral vault were found, the lowest of which was situated one inch above Rcid's base line and three-quarters of an inch anterior to the external auditory meatus, while the other bullet had made an entrance at a point one inch above and slightly posterior. These punctures were enlarged with the De Vilbiss trephine, rongeur converted the two apertures into one and the plate of bone (2×3 inches) removed. The dura was found to be lacerated where the two missiles had plowed their way into the cerebral tissue. By means of a probe the upper bullet was located and removed, its fellow could not be found and the search was discontinued for the patient's vitality had ebbed very low, owing to the furious hemorrhage.

The dura was sutured with fine silk, the scalp with silk-worm gut and a gauze drain inserted. The patient was put to bed and one liter of decinormal salt solution given per rectum and 400 c.c. subcutaneously, besides strychnin, atropia, etc., by which means the profound shock was overcome.

From this point on the improvement was rapid and the patient made an uneventful recovery.

These cases were deemed of interest on account of age, extent of injury and complications of the first case; the unfavorable surroundings and extent of injury in the second.

Our conclusions then should be, that with our modern technic, depressing, crushing and penetrating injuries of the cerebral vault, even though of an extreme nature, can be recovered from, which a few years ago would have terminated fatally.

Aneurysm of the Transverse Aorta and Innominate Artery.

By WILLIAM T. COUGHLIN, M.D.,

ST. LOUIS, MO.

THE patient was a colored man, aged 45 years, laborer, working usually as a roustabout. He was not much given to excesses of any kind; used tobacco and drank moderately, chiefly of beer.

There was nothing of any significance in his family history. He had had the usual diseases of childhood; also malaria and gonorrhea. No history of lues was obtained.

About eighteen months before entering the hospital he had one day, while helping to lift a heavy bale or cask of tobacco, felt a sudden sharp pain in his chest; a few months afterwards he began to be troubled with shortness of breath on exertion and to have dull boring pains in his chest on the right side and in the right arm. About six months ago he first had trouble in breathing while recumbent, and soon after he began to be troubled with a dry cough and hoarseness. All his symptoms continued to grow worse in spite of skilled medical attention, and he came to the hospital in the latter part of December, 1901.

He was of medium size, fairly well nourished and well muscled. The eyes were prominent; he was dyspneic, unable to lie down, complained of pain in the breast and right arm and difficulty in swallowing; he had a peculiar hoarse cough and profuse watery expectoration, and complained of loss of voice.

A tumor could be seen protruding upward and to the right into the neck, behind the manubrium and clavicle, and forward between the clavicle and the second rib to the right of the sternum. It pulsated visibly and the pulsation was found to be expansile. There was some distension of the right external jugular. A bruit could be heard over the tumor as could also a double aortic murmur. The apex beat was in the mammillary line in the sixth space; the pulse was regular,

soft and easily compressible; the right was of slightly less volume but was synchronous with the left; there was good pulsation in the femorals.

The "tracheal tug" was distinctly obtainable.

On January 9, 1902, he complained that he had slept poorly and that the tumor had grown a lot during the night. On examination it was found to have increased to about three times its former size and now reached from the level of the upper border of the thyroid cartilage to the third rib (right ride); it looked like an inflammatory mass and was most prominent just below the clavicle. He was weaker than on the previous day.

The tumor continued to increase in size and he continued to grow weaker, and died January 10th.

Extract from the post-mortem report is as follows:

In cutting into the intercostal muscle, first space, right border of the sternum, there was found a cavity containing fluid and clotted blood. The right clavicle was eroded through about half an inch from its sternal end; the first rib was also eroded through about half an inch from its articulation with the sternum. Through the apertures thus formed the cavity mentioned above communicated with a large aneurismal sac.

There was 100 cc. of serous fluid in the pericardial sac; the heart was larger than the individual's fist; all the cavities contained fluid blood and mixed clot: there was dilatation and hypertrophy of all parts of the heart, especially of the left side; there was a relative insufficiency of the valves, except the aortic, which was actually insufficient. There was thickening of the endocardium, most pronounced in the valves, and the beginning aorta showed atheromatous change. There was a large aneurysm of the arch of the aorta, beginning just at the attachment of the pericardium; its direction was upward and backward and to the right; the aneurysm extended to the origin of the left common carotid. The innominate artery was also involved in the aneurysm.

The measurements of the aneurysm was as follows: The vertical diameter, 22.5 cm.; transverse, 17.5 cm. and antero-posterior, 12.5 cm.

The only other pathological condition found was parenchymatous nephritis.

Medical Examinations in Our Public Schools.

BY E. A. DONELAN, M.D.,

ST. JOSEPH, MO.

MY experience and observation in the practice of medicine in this city for twenty-five or thirty years, during which time I treated many school children, has convinced me beyond a doubt that many lives would be saved by proper medical examinations.

The great number of contagious, as well as non-contagious diseases, can not be detected or diagnosed by superintendent or teacher; consequently, it is important for an experienced examiner to examine all who are not well, and take proper steps to protect the children affected, as well as the other pupils.

If it is a contagious disease, the pupil should be sent home with instructions to parents to call on their family physician for the attention the child may require.

While investigating the subject of medical examiner for schools, I find Boston was the first city to establish the system. In 1894, during the prevalence of a severe epidemic of scarlet fever, the good results were so manifest, that New York, where there was great fatality among school children, adopted the system; then Chicago and many other cities, large and small.

Dr. Green, Medical Inspector of Boston, in his report, says: "The children are divided into two classes—first, contagious diseases; second, non-contagious diseases, disabling and rendering children mentally and physically below the normal standard."

The examinations are conducted so as scarcely to disturb the schools. The medical examiner calls on the principal and teachers and ascertains if any children under their charge are unwell from any cause. If any, they report the names to the medical examiner, who has them come to the teacher's room, where they are examined and a note or memorandum is made

of the result of the examination and this is kept for future reference.

The teacher is then advised as to whether the child should be sent home for treatment by the family physician or remain in the school. While we have rules governing the return of children to school who have had contagious diseases, it is impossible at times to enforce them in the interest of the health of the schools. Parents and children are eager that they return to school and the attending physician is sometimes persuaded to give the child a certificate to return in a shorter time than required by the rules of the school, and the child not being thoroughly disinfected, the disease is spread.

A child may have had a fever and sore throat due to diphtheria bacilli, and return to school, others may return in the desquamating stage of scarlet fever.

The examining physician should have a diphtheria culture outfit, and take cultures of every acute case of pharyngitis and tonsillitis in the schools, as many cases of diphtheria can be discovered in no other way.

We also have children who have been exposed to small-pox who, in a few days or a week are sent to school, the parents not being aware that the incubation stage is from fourteen to sixteen days after exposure.

Also pulmonary consumption, that is claiming more victims, I believe, than any other disease, is found in nearly all of our schools in the incipient stage; and teachers having it in the advanced stage are sometimes permitted to teach while they are able. It is a well-established fact that the bacilli from the sputa inhaled day after day, especially in susceptible constitutions, will establish the disease. It may be slow in developing, but sooner or later the child will become its victim. In justice to the child it should be taken out of school and receive the necessary treatment to build up its system and arrest the disease. Many bright, ambitious children, with delicate constitutions, are overtaxed with studies. Their system gradually breaks down under close application, resulting in nervous prostration and other conditions that require rest and medical attention.

Medical examiners in no case make suggestions as to treatment when a child is sent home, but direct that they call on their family physician. I have found chronic enlarged tonsils or polypi in the nose, causing the child to breath through

its mouth and retarding the progress of the child in the schools.

Myopia, or near-sightedness, is rapidly increasing through the grammar grades to the high school. There are a great many young people required to wear glasses; this was not the case twenty-five or thirty years ago. The cause and conditions leading to its rapid increase should be ascertained and the necessary steps taken to arrest its rapid increase. Myopia, from the best information I have, is not hereditary.

Dr. Ault, who had an opportunity to make extensive observation, says it can not be looked upon as hereditary. Cohen found in 104 myopias that only 2.7 per cent had near-sightedness in the father or mother. Observation of our oculists favor the above views. There are many conditions that add to the impairment of the eyesight; we may mention school-rooms not being properly lighted—too much or not enough light. Children are often compelled to face a strong light, with blackboards placed between windows. It is preferable to have the light to the left or back of the pupils. High windows illuminating the ceiling reflect the light through the rooms.

Another factor that gives rise to many cases of near-sightedness is studying at home under unfavorable circumstances, particularly, bad light. Delicate children, in my opinion, should rest while at home, and get a good night's sleep. A few of our school-rooms are yet heated by stoves; it is impossible to regulate them, and the heat rises while the floor is cold, producing cold feet and warm heads; this gives rise to headaches that usually affect the eyes. However, with the late improvements, hot air and steam, the heat can be regulated throughout the room—if the janitor understands his business.

The mode of sweeping and disinfecting is of great importance as regards the health of children. Among the different disinfectants now in use I believe formaldehyde is the best germ destroyer, when properly used, but like all other aids to health, should be intelligently applied. The best mode of sweeping rooms should be ascertained and practiced in all our schools. The usual mode is scrubbing and dry sweeping.

Dr. Bennett, the bacteriologist has made experiments to ascertain the number of bacteria found in the air after sweeping with sawdust, dry and damp, the floor brush moistened by

cotton waste saturated with kerosene oil, also a patent floor brush containing a reservoir filled with kerosene oil. This brush is saturated by the oil in the reservoir during the process of sweeping and prevents the dust from rising in the room. Dr. Bennett found the use of kerosene to be decidedly the best, the number of bacteria in the air compared with dry sweeping being reduced to one-twentieth the number.

When we consider the great importance in every department of our public schools, of maintaining health and preventing disease, which in many instances results in death, the great advantages to be derived from an intelligent medical director, is apparent to all.

I should state that in many of the cities the medical examiners are appointed and paid by the city under the charge of the board of health, school boards rendering all possible assistance.

Viewed from an economical point, preventive medicine adds greatly to the wealth of a nation, placing the low value of \$1,000 on the life of a human being. A properly-conducted medical inspection of all conditions pertaining to the health of our schools would not only save lives but many dollars to our cities. It is true that medical examiners have not been appointed in any of the cities in Missouri. I find our school boards are slow to take up anything new; they have a great horror of fads, yet I believe that the St. Joseph School Board would have adopted the system some time ago but for the want of funds.

We attribute the present great energy and vital force in the United States to our excellent system of education. It is, I believe, our duty as a benevolent profession to take the lead in this important work in the interest of the children in our schools.

Acute Pneumatosis Gastro=Intestinalis.—Castelli (*Medical Record*) proposes the above name for cases of indigestion accompanied by a rapid formation of gas in the stomach and in the intestines, with consequent overdistension of these organs. He regards the affection of nervous origin. He believes that the formidable symptoms—breathlessness and unconsciousness, are due to a failure of the respiratory center rather than the heart. He believes that treatment directed to the nervous system will insure the best results.

LEADING ARTICLES.

THE SIGNIFICANCE OF CONVULSIONS IN INFANCY.

By A. S. BLEYER, M.D., St. Louis.

At the last French Medical Congress the subject of convulsions in infancy was taken up at exhaustive length. Certain new and striking advances are recordable (*Le Progrès Médical*).

The relation of infantile convulsions and epilepsy received careful attention. Fétré remarking the frequent identity of the two, and presenting statistics of the fact that 34 per cent of cases are of epileptic antecedents. Moreau places these figures at 17 per cent. Habermas, on an observation of 1200 cases, finds epileptic progenitors in 20 per cent.

Fétré further shows the number of epileptics developing in children before the fifth year, 20 per cent (Berger) and before the third year, 12.5 per cent (Gowers).

The further question of the development of epilepsy in children who have had eclamptic spasms is raised. There is here also great conflict of data. Coutts finds 11 cases of late epilepsy in 85 cases of infantile eclampsia, 29 of the others developing some other nervous disease, e.g., migraine, chorea, sane psychosis, etc. Dufour finds that of 66 infantile eclamptics, 15 became epileptics. Bullard finds 9 children developing sane nervous signs in 19 cases. Another clinical record shows 6 late epileptics in 30 early eclamptics.

d'Espine points out that these figures represent the fact that the prognosis in infantile convulsions is dark, and but little safety can be felt for the patient's future, even after an apparent cure of the spasms. The spasm being in many cases but an expression of grave disorder of the nervous system, which will often show itself again.

Moussons points out, however, that it is really in the most precocious cases of epilepsy that there is the most hope of ultimate recovery. This authority recognizes no relation between infantile eclamptic spasms and epilepsy other than that a neuropathic taint can well be incriminated in both.

Moussons recognizes in infantile convulsions a very prolific cause of strabismus. The cerebral trouble sufficient to produce the spasms is also sufficient to prevent the adaptation of proper binocular convergence and accommodation.

Cabannes does not hold this view, but attributes the two occurrences to some common underlying factor.

The coincidence of the two, nevertheless, is more than passing. Ginestous, in the Childrens' Hospital of Bordeaux, finds that in 62 strabismic babies, 45 had been eclamptic. Such strabismus is usually hypermetropic.

The determination of resultant nystagmus would, perhaps, yield more information, since a material lesion might then be demonstrated accountable for the spasmoid seizures.

d'Espine further divides infantile convulsive states into three orders: (*a*) Eclampsia, (*b*) spasm of the glottis, (*c*) tetany. Placing them this way in the order of their frequency.

In 10,000 sick babies, eclampsia was found in 62, spasm of the glottis in 51, and tetany in 20.

According to Baginsky's Berlin statistics, bearing on 208,035 babies, in a given 10,000 babies, there would be 61 cases of eclampsia, 33 spasms of the glottis, and 6 cases of tetany.

This is the first publication of these statistics, and show that convulsions in infancy are not so common as seems to be generally believed.

THE CAUSES OF VARIABILITY IN MAN.

In studying the progress of man, the gradual evolution of our modern civilization, the student will naturally search for the causative factors that have wrought such tremendous influence. The study will extend from the race as a whole to particular races. Why has some branches of the human family gone so much further in this development than others? To the anthropologist this subject has an absorbing interest, and its solution may have some practical bearing on scientific sociology. To use the phraseology of modern thought, it is evident that greater and more permanent variations occur among the enlightened races.

In all ages there have been races which were very much superior

in culture and civilization to other races or neighboring tribes, which were designated the Barbarians. Such were the Grecian and Roman civilizations in Europe. The Aztecs in America occupied a similar position in reference to culture among the American Indians. Now, the question arises, what made this particular race superior in civilization to the surrounding people?

Charles H. Duncan, in a short article, advances the theory that variety of food and mental capacity is inseparable; whenever a race eats of a great variety of food, which is obtained at home and from distant countries, that race will advance in intellectual ability. He regards a variety of food necessary for the highest intellectual advancement; moreover, he claims that the more local the food supply, the less is the mental development. It is pointed out that all races who were advanced in civilization obtained their food, to a great extent, from a distance. The nation or people who had the most foreign merchants were most advanced.

Plausible as this theory seems at the first moment, an examination of history will show that the problem is by no means so simple. In the first place, a study in variation in animals, particularly domestic animals, shows that variety of food has little or no influence. Darwin asserted, that "it is doubtful whether a change in the nature of food is a potent cause of variability." He points out that the food of our domesticated animals is much less varied than the animal in the wild state. But it is generally conceded, that an excess of food is followed by the evolution of greater variations. Adlerz, the eminent Swedish zoologist, has called attention to the fact of the great variability of domestic animals; he declared that the changed conditions to which animals and plants are subjected in a state of domestication must, of course, mean a decided mitigation or even a complete cessation of the struggle for existence; therefore, the individual organism is able to grow up under the most favorable circumstances. The amplitude of variation in a species is much greater under favorable surroundings, particularly when the quantity of food supply is large.

If the experiments made on animals by zoologists be followed, if the variations among domestic animals he studied, or if the progress of mankind be carefully scrutinized, as found in history—the conclusion is the same; whenever conditions are obtained when the food supply is plentiful and the struggle for existence is minimized, mental ad-

vancement almost invariably followed. It is rather the abundance of food than the great variety that is connected with intellectual progress.

The human organism has great power in the way of adapting food constituents to the needs of the different structures. Great complexity of the food constituents are not necessary; a new food can not initiate the growth of a new mental process; probably the importation of Japanese, Chinese or other foreign foods can not add to our individual mental progress. Our most intellectual men most frequently live on a very simple diet; and wise sons spring from families who lived upon simple foods for many generations.

We can not, therefore, support the theory that a variety of food is at the root of our modern civilization. This factor, probably, has only a very limited influence. The variety of food, as a rule, indicates that there is an abundant supply on hand, and it is to this abundance rather than its great variety that a special influence must be ascribed.

DEPRESSION OF THE OCCIPITAL BONE.

Displacements of bones have figured largely in etiological conceptions, and it is well to recall these occasionally even if it is only for our amusement. It was J. Marion Sims who first advanced the theory that tetanus neonatorum was caused by a depression of the occipital bone; in fact, it was found that the parietal bones frequently overlap it. This depression causes mechanical pressure on the pons, medulla and brain tissue, resulting in eclampsia.

This theory was elaborated and proof of its correctness was collected by Hartigan in an extensive study (*American Journal of the Medical Sciences*, Vol. LXXXVII, 1884).

There was considerable confusion of the clinical picture at that time, and eclampsia and trismus nascentium were frequently grouped together. Tetany was thrown into the same class. It was often regarded as a distinct disease from tetanus in the adult.

Hartigan made no difference in these cases. He described a long series of cases in infants, their ages ranging from a few days to many months, and in studying his description it is easy to recognize eclampsia, tetany and tetanus.

He reported quite a large number of cases, mostly eclampsia in

atrophic children, in which convalescence commenced after he had replaced the depressed occipital bone. The child would be crying, whining, having spasms and vomiting, the occipital bone would be replaced or the posture of the infant would be changed so as to relieve the pressure, and at once the change for the better would begin.

Of course, no one now believes that eclampsia and tetany depends on depression of the occipital bone, and trismus is known to be tetanus depending on the infection of an anaerobic bacillus, but it may be well to pay some attention to the bones of the head in infancy. Their mobility by pressure may, at least, cause some distress and by change of posture, or occasionally by replacement, the little sufferer will be relieved.

This theory of pressure has largely figured in the early studies of tetany. Not only displacements of the bones but also pressure on the soft places in the occipital bones (craniotabes) was supposed to bring about an eclamptic seizure!

But the theory had little influence, and attacked by such men as J. Lewis Smith it soon was forgotten. Yet it marks an interesting stage of pediatric progress.

MORBID PROCESSES LIKE SPECIFIC DISEASES.

That medical nomenclature abounds in imperfections is too well known to need exemplification, but it should be our desire to root out these imperfections as our knowledge of pathology advances. What is especially lacking is uniformity in the use of certain prefixes and suffixes. The misuse of these causes endless confusion in our terminology.

One of these suffixes to which we wish to draw particular attention is *oid*, meaning like. There is an increasing tendency to use this suffix attached to the name of a specific disease, thereby designating obscure disorders, which in their clinical picture somewhat resemble the specific disease.

In most instances the temporary use of such a term may really be very helpful, but the grounds for its use should always be the same. Unfortunately, this is not the case; and for a variety of reasons this suffix is attached to the name of specific disease.

In the first series, the ending means a mild attack of the disease. Varioloid is a familiar example. This term should be discarded, for varioloid is not like smallpox, but it is smallpox; a careless use of the term may, therefore, be misleading.

Another class of cases were named from their resemblance to another disease, but the specificity of the former has been demonstrated, hence they deserve a distinctive term. Such is the word typhoid. Typhoid, meaning like typhus, has no significance. The disease is much better understood than the affection from which its name has been taken. The ending, therefore, is meaningless.

A more extended use is found in a mere resemblance of non-specific or obscure disorders. Thus has originated the terms pertussoid, erysipeloid, etc. By these terms certain groups of symptoms are known which, more or less, resemble pertussis and erysipelas. They have come into general use and their significance outside of calling attention to the likeness is nothing.

But the ending *oid* is really adjective, and its use should be restricted to defining and limiting other names. It is, therefore, proper and consistent to speak of a pertussoid influenza or angina, an erysipeloid dermatitis, a vaccinoid eruption, a scarlatinoid erythema, etc. This is the proper use of the term, and its introduction as a concept offers nothing advantageous.

The prefix *pseudo*, is more fitting, when a second disease having some of the characters of the first, is in need of appellation. Thus we speak of pseudo-diphtheria, pseudo-angina, pseudo-leukemia, pseudo-meningitis, etc.

The prefix *para* is more properly used in connection with lesions which anatomically have a proximity to an original disease, as paratyphlitis, paraproctitis, parametritis, etc. Lately, however, there is a tendency to apply this expression to terms having a bacteriological or pathological nearness; as paratyphoid.

It will be seen that no great uniformity exists in regard to the use of these endings, and until their application is made on common grounds the individual significance must be learned.

EDITORIAL COMMENT.**Acute Inflammation of the Pharynx Tonsil.**

Inflammation of the pharynx tonsil is receiving considerable attention, and it is becoming recognized that we may have a tonsillitis of the pharyngeal tonsils as well as the faucial tonsils. The pathology of the two diseases is about the same and the etiology, pathogenic bacteria, is the same in both cases.

The clinical history is also similar. The child is seized with an irregular fever which lasts from two to five days. There is a slight discharge from the nose, and earache frequently ensues. But even these may be absent, and many cases of febricula, "malarial" attacks and stomach disorders are really cases of pharyngotonsillitis. As Swain has pointed out (*Yale Medical Journal*, August, 1902) the progress of the disease is variable. In some cases the fever declines in a few days; in many cases one or more acute exacerbations occur and inflammation of the cervical lymph nodes, or subacute enlargement follows, which heals very slowly.

Like all inflammation of the upper air passages the disease has a tendency to spread, and pharyngitis, otitis media, laryngitis and bronchitis are prone to follow.

Teaching the Blind to See.

In a previous editorial we mentioned the progress made in teaching the blind deaf-mute to speak and read. Now, it is reported that M. Heller, a well-known teacher of the blind in an institute near Vienna, has succeeded in teaching a blind boy to recognize color and objects. In the case of a boy who was congenitally blind but who possessed a defect of the retina, this teacher has demonstrated that slight defects may be gradually overcome. In a dark chamber, by the aid of a well-illuminated disk he gradually taught the patient to distinguish light from darkness. Having accomplished this, common objects were placed against the disk, and he was told what they were. Gradually, he acquired the power to perceive such objects as a key or ball. Then he was taught various geometrical figures and, finally, the alphabet.

Still he was blind outside of the dark room, but later he learned to distinguish objects in bright daylight.

Evidently the organ of sight or the central nervous system was defective, but a residuum of normal structures was present, which gradually developed.

This method of training may promise much in the future in developing the eyes of those whose sight is not entirely destroyed.

Phototherapy in the Treatment of Neurasthenia.

Red light is becoming very popular in the treatment of diseases. Finsen recommended it in smallpox; another prominent author advocates its use for the treatment of erysipelas; now Joire (*La Semaine Medicale*) has found it very beneficial in neurasthenia. He believes red rays are to be preferred in the treatment of this disease, as they have a greater penetrative power. It is said they have a regulating effect on the circulation; they also possess an analgesic influence, removing the pain and increasing a feeling of wellbeing; hence their use is especially to be recommended in hyperesthesia. We fear some of this light effect is as yet unproven; any change or suggestion will improve neurasthenics. Then erysipelas varies so much in intensity that it would be difficult to estimate its effect.

Pineapples as Digestants.

Digestive enzymes are contained in many fruits; particularly well known is the juice of the papaw. The *Carica papaya*, or South American papaw, has a ferment in its juice which has a very powerful proteolytic action. Under the name of papain, papoid, etc., the enzyme is found in the market.

Another plant which contains a powerful ferment is fresh pineapple juice. It also has a powerful digestive principle, which has been termed "bromelin." It is capable of digesting one thousand times its own weight. Like papoid, it acts in a neutral, acid or alkaline medium, and it is supposed will continue its action after reaching the intestine. The active principle of the juice is precipitated by dissolving much sodium chloride in it; it is destroyed by boiling.

When it is considered that a good-size pineapple contains as much

as a pint of juice, its cheapness as a digestant commends itself, and may thus replace the expensive preparations of papoid. A few tea-spoonfuls of pineapple juice should be recommended when there is a deficiency in the digestion of proteids.

One question arises, however, are the peptones formed by the vegetable enzyme the same as that formed by the animal ferments? Can the intestinal epithelium utilize the digestive product without further change? These questions have not, as yet, been answered.

The Identity of Pathogenic Streptococci.

There has been much dispute concerning the question of identity of the streptococcus. It has been claimed that the streptococci may belong to several varieties or species, and thus the antistreptococcal serum, made by using the poison of one variety, will not affect another race. Marmorek claims that all pathogenic streptococci are identical. He bases this claim on the three common characteristics which he has found present in all the bacteria taken from forty-two diseases. These peculiarities were: The production *in vivo* of hemolysis in rabbit's blood, the inability to grow upon a filtrate of their own cultures, and the immunization of animals by Marmorek's antistreptococcal serum.

The immense amount of labor in trying to separate different species of streptococci is, therefore, wasted, and clinicians will be compelled to find some other excuse why the antistreptococcus serum does not cure. But it must be remembered that the virulence of the micro-organism varies greatly.

A New Use for the Appendix.

At last some use has been found for the appendix! This rudimentary organ, which endangers our lives and offers nothing to repay this privilege, has been given a definite surgical use. Dr Weir, of New York, (*Med. Rec.*) suggests that the appendix be used to form a fistula into the intestine to be used for irrigating the large intestine in chronic ulcerative non-amebic colitis. He reports one case and expresses admiration for the fine fistula made by anchoring the end of the appendix in the abdominal wall, the tip having been removed. Through this opening the large intestine can be thoroughly irrigated.

He declares that the muscular coat of the appendix prevents leakage and the fistula has no tendency to close.

No doubt if this operation proves as great a success as the first case, the treatment of intractable colitis by this operation will come into extensive use, and surgery will again have achieved a triumph.

MEDICAL RESEARCH.

Review of Progress in Physiology, Physiological Chemistry, and Experimental Medicine.

In Charge of

JOHN ZAHORSKY, M.D., A. S. BLEYER, M.D., and PHILIP NEWCOMB, M.D.

Gelatin in Hemorrhages.

The value of gelatin as a hemostatic is not a thing of recent knowledge. Hesper¹ first made mention of its efficacy in 1838; but its use has heretofore been almost entirely limited to the treatment of aneurysm, as first practically advocated by Lancereaux and Paulesco.² A new field of usefulness has been opened by the success of subcutaneous injections of gelatin in the treatment of internal hemorrhages of all kinds.

From the clinic of Leipsic, as early as 1898 came the report of the use of gelatin injections as a means of checking internal bleeding, and further investigations by Grunow,³ in the medical clinics at Kiel since 1899, confirms its value in a wide circle of activity, it being used in hemorrhages of the lungs seven times, of the intestines eight times, and of the stomach seven times, and also in cases of bleeding from the kidney and its pelvis, from the bladder and following rupture of an aneurysm.

Senator and Sticker also advocate the treatment of gelatin injection for hemorrhage from the lungs.

The method used by Grunow consists of injecting into the outer or inner side of the upper part of the thigh 2 grams of gelatin in 100 grams of sterile normal salt solution—never more than twice that amount to be used. The injection may be made at one or two points as convenient. Untoward symptoms observed were pain at the point

of injection, elevation of temperature and, in one case each, urticarial eruption and circumscribed swelling of the musculature.

The following conclusions are drawn:

1. That in gelatin injections is obtained a surer method of combating hemorrhages from internal organs in every case.
2. That the subcutaneous injection of gelatin is accompanied by only local inconvenience which does not in the least contraindicate its use.
3. That gelatin is to be employed in all cases of severe internal bleeding.
4. That the hemostatic action of gelatin when not sufficient to arrest the bleeding of itself will, when in combination with other direct or indirect hemostatics, bring about the desired result.

The injection of a 2 per cent gelatin solution has also been used with the most signal success by Kahr,⁴ in combination with Poppet's water-tight drainage, for the hemorrhage often following operations upon the gall-bladder and ducts.

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The Significance of Albumosuria.

This condition need divert but little attention to the kidneys, and less to the intestinal tract than has been variously suggested.

It, like the presence of indican in the urine, was first believed to be an enterogenous product. Recent research has led us away from this view.

We must not look upon albumosuria as the excretion of an intermediate product in proteid cleavage, due to a faulty or arrested digestive process. It is with the greatest difficulty that the albumoses are made to appear in the urine after their introduction into the alimentary canal even under the most advantageous chemical influence.

It would, perhaps be well to regard the urine-albumoses as body cell derivatives, and not as coming from foods in which the albumoses remain as such but a short time, and are crystallized before passing into the circulation, for as peptones are no longer capable of excretion. We believe this view to be correct, the varied conditions capable of producing albumosuria in patients where perfect digestive pro-

cesses are going on, constitutes in itself a splendid demonstration of this fact.

In Herter's recent "Lectures on Chemical Pathology," 1902, he claimed distinctly that there is no pathologic process capable of causing an excretion of peptones in the urine, the term peptonuria should, therefore, be discarded. Albumosuria is broad enough, and for the pathologist embraces many different urinary findings, but until his selection of various groups of albumoses can direct us accurately to distinct pathologic processes, the term as it stands will suffice.

Albumosuria is found most often in suppurative processes, especially where there is retention, disintegration and absorption of the pus.

Aldor¹ found it present in 90 per cent of 53 cases of acute fever, selected at random.

Fitz² insists upon its occurrence in latent bone tumors. He is strongly supported by Hamburger, by Ellinger,³ and by Zuelzer's interesting experiments⁴ who, by subcutaneous administration of pyridin in rabbits, produced albumosuria, followed by albuminuria and death. Post-mortem examination in all these cases showed numerous lymphatic deposits in the bones, and also marked basophilic granulations of the erythrocytes, which he considers secondary to the derangement of the function of the bone marrow. It is noted that anemia is a frequent symptom of latent myelomata. If, therefore, in a given case of anemia, we find albumosuria present, and can rule out acute fever, cancer (especially alimentary) and suppuration, the diagnosis of multiple myelomata is assumable on very positive grounds.

The simplest test for the presence of albumoses in the urine is to add nitric acid—a precipitate forms, which disappears on heating and reappears on cooling.

A more complex test, but decidedly more accurate, since the presence of urobilin in the urine would interfere with the other, is the following—suggested by Adlor :

Place 5 to 10 cc. of urine in a test-tube, add 1 to 2 drops HCl, then add phosphotungstic acid until no precipitate occurs. Centrifuge; pour off the fluid, shake the sediment with alcohol and then pour off the alcohol, repeating the process two or three times, then add the concentrated sodium hydrate solution to the sediment. A blue color appears, which vanishes after shaking in the air. The biuret test is then applied.

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The Trimethylamids.

Desrez and Zaky (*Le Progres Medical*, July, 1902) in studying the action of lecithins, find them possessed of marked influence on the salivary, renal, pancreatic and hepatic secretions. The trimethylamid group, to which lecithin belongs includes cholin and pilocarpin. It is found that the trimethylamids have a very marked and unvarying action on the secretion of bile. This indication should be of service in the treatment of jaundice and the various so-called bilious states.

The Secretion of the Pancreas.

Delezenne and Frouin demonstrated recently to the Society of Biology of Paris that the pancreatic secretion contains no ferment capable of converting albumin into peptone or even albumose! By establishing a permanent fistula in various animals, by the method of Heidenhain-Pawlloff, in such a way as to permit of direct catheterization of the duct of Wirsung, they obtained the secretion unaltered. If, however, to the secretion thus obtained, a small portion of the intestinal mucosa from the immediate neighborhood of the duct opening, be added, marked proteolytic powers are observed.

There is then in the gland tissue of the duodenum immediately surrounding the opening of the duct from the pancreas, an auxiliary substance, indispensable to pancreatic proteid digestion. This fact is important in connection with the administration of pure pancreatic extract as a digestant, and indicates the necessity of still further elaboration of this substance for use as a drug.

Fatigue in Nerves.

One has heard much concerning the fatigue of nerves, particularly in connection with neurasthenia and nervous debility. But it has been demonstrated (Bowditch, Bernstein) that the medullated motor nerves are not fatiguable. The method usually adopted in such experiments has been to excite the nerves for a number of hours, and by keeping the impulses from reaching the peripheral organ, it was found, after removing the block, that the nerve conducted impulses as well as ever.

The blocks used have been curare, cold, electricity, ether and atropin. Brodie and Halliburton (*Journal of Physiology*, Vol. XXVIII, No. 3) showed, after an extensive experimentation with the non-medullated nerves of the spleen, after many hours of stimulation, that these nerves give no demonstrable evidence of fatigue.

The "stimulation fatigue," introduced by some writers, indicates that certain nerves are injuriously affected by prolonged faradic stimulation.

The Digestion of Cane Sugar.

It is known that the digestion of cane sugar is accomplished by inversion, that is, the sugar is split up into levulose and dextrose. Now, what enzyme does this? The subject has been studied by various writers. The pancreas has been shown to have no inverting action. The intestinal mucous membrane in the pig possesses the power of hydrolysing maltose and inverting cane sugar. The dry mucous membrane has this effect, while extracts from it are comparatively feeble. (Drown and Heron).

Widdicombe (*Ibid.*, No. 1 and 2) experimented on this subject and concludes that the intestinal mucous membrane inverts cane sugar freely, but the lymphoid tissue in the intestinal wall has no part in this activity. The gastric mucous membrane and the gastric juice contain an inverting enzyme, while the saliva has no effect.

Intestinal Absorption.

The controversy concerning the mode of intestinal absorption is by no means closed. One school of experimenters are confident that this physiologic activity can be entirely explained by physical causes, *i.e.*, osmosis, chemical action and muscular action. On the other hand, other investigators constantly find an additional force in studying the dynamic action of the absorptive functions. While not denying the influence of osmosis and chemical action, these authorities find activities which can in no way be explained simply by physical action. Bunge has expressed himself on this subject in strong terms. He asserts that the more thoroughly the digestive function is studied, the more evident becomes the insufficiency of osmosis and chemical action to account for the physiological phenomena.

Waymouth Reid (*Ibid.*), after experimenting on this subject, finds that the cell mechanism can deal with considerable variation of os-

motic pressure of the solution presented to it, but as the pressure increases a limit is reached, beyond which it is affected and the absorption of water, consequently, retarded. The normal uninjured gut membrane is not to be considered as a simple osmotic membrane, but the action of the cells is affected above certain limits of osmotic pressure.

He concludes from a study of the absorption of weak solutions of glucose and serum that with the intestinal membrane as normal as the experimental procedure will admit, phenomena present themselves which are distinctly opposed to a simple physical explanation. The specific cell-action is the main factor, variable according to changes in the physical environment.

Alkalinuria.

The clinical phenomenon of voiding milky urine, which on test is shown to be phosphates, is fairly common. It has been called phosphaturia. The clinical significance of this is not very clear, but it has been shown that no excess of phosphates is passed in these cases. Leo proposes that this class of cases should be called alkalinuria, since it is not an excess of phosphates, but their precipitation by the alkaline urine which characterizes the condition. The exact source of this increase of alkilineity has not been definitely determined.

The Diplococcus Perlucidus.

Dequy and Weil announced to the Society of Pediatrics of Paris, May 20, 1902, the finding in six cases of diphtheria of a certain diplococcus to which they attribute a septicemia independent of that caused by the Klebs Loeffler bacillus. The course of such diphtheria is much modified, and becomes most manifest after the clearing of the false membrane. This late septicemia is usually fatal. The diplococcus to which the above name was given was found in the blood during life and post mortem in the heart clots.

DIAGNOSTICS.

Incipient Carcinoma of the Endometrium.

The obscurity and uncertainty of diagnosis in carcinoma of the endometrium calls for a careful study of the early symptoms. A serous

or seropurulent discharge tinged with blood is highly significant in a woman passed the menopause. All other signs are indistinct and meaningless. Pain and enlargement of the uterus are two other signs of less value. Fetid discharge and a cachectic appearance make their appearance later in the disease.

The conditions which are liable to be mistaken for cancer are different forms of endometritis, retained placenta, a polypus, submucous fibroid, sarcoma of the mucous membrane, malignant deciduoma, etc.

In order to guard against diagnostic errors, all the means of exploration must be employed; these comprise probing the uterus, digital exploration after dilatation, and microscopical examination.—Schmitt, *Medical Record*.

Erythema Scarlatiniform.

The separation of various forms of erythema scarlatiniform from scarlet fever often offers great clinical difficulties. Kerr (*Brooklyn Medical Journal*, August, 1902) offers the following facts as helpful:

1. There is one constant symptom in scarlatina—the enlarged papillæ of the tongue.
2. The erythematous rashes rarely or never appear on the face.
3. They are apt to be darker than the exanthem of scarlatina.
4. They are often the first symptoms noted.
5. Their distribution is irregular and inclined to be in areas, these areas are often sharply defined.
6. There is less evidence of an acute or virulent infection.

Another Cause of Cough.

Jarecky (*American Journal Medical Science*, July, 1902) finds that hypertrophy of the lymphoid tissue at the base of the tongue may be the source of an obscure cough. Other symptoms present are—a feeling of a foreign body in the throat, loss or impairment of the singing voice, huskiness, pain in the ear and chest, tickling in the throat, dysphagia and vomiting.

An Early Sign of Exudative Pleuritis.

Przewalski (*Central. f. Chir.*, April 5, 1902) reports that he has found a special sign in the early stages of pleuritis exudativa. This consists in a narrowing of the intercostal spaces and an increase of

resistence in the interspaces of the affected side. He demonstrated this sign invariably present in nineteen cases. This condition is probably due to a contracture of the intercostal muscles and the mechanism is analogous to the contraction of the muscles over the inflamed peritoneum, that is, it is a reflex contraction.

Tuberculous Peritonitis in Children.

The pathologic changes observed at the operation are always more grave than is inferred from the clinical symptoms. By grasping the abdominal wall in a fold, a thickening of the abdominal wall is demonstrable, it is also sensitive. Fluid is not always present in the abdominal cavity. Evidences of tuberculosis elsewhere must always be sought. A serous pleurisy would strengthen the diagnosis of tuberculous peritonitis.

A Sign of Hereditary Syphilis.

A French writer, Dr. A. Brunet, states that erosion of the first lower molar tooth is a pathognomonic sign of hereditary syphilis. This sign is said to be much more reliable than irregularities in the incisors for the reason that ossification of the first molar occurs at the sixth month of intrauterine life and the erosion is due to a partial interference with the normal process of ossification.—*Penn. Med. Jour.*

Pseudocirrhosis of the Liver.

Chronic adhesive pericarditis has often been the source of diagnostic errors. It is known that marked ascites often results from this disease. Strajesco (*Allgem. Wiener Med. Zeit.*; *American Medicine*, July 19, 1902) reports the case of a man, aged 62 years, who had dyspnea, pain in the chest and edema of the lower extremities, scrotum and abdomen. After tapping the patient the liver was found enlarged and hard. At the autopsy were found adhesive pericarditis, chronic intestinal myocarditis and tuberculosis of both apices.

Ovarian Tumors.

Ovarian tumors occur most frequently in middle life, being comparatively infrequent at the two extremes. While of slow growth they increase more rapidly in size than does the parovarian cyst, and much more rapidly than the uterine myoma. Ordinarily, it takes some years to produce a tumor of large dimensions. They push the uterus to the opposite side and partly fill the pelvis. Becoming impacted they cause

serious pressure upon the bladder, uterus, rectum or nerve trunks. Passing into the abdomen, if the growth is a single cyst, it will present a hard, round, tense, fluctuating surface, be dull upon percussion, movable, free from pain and situated to some extent upon the side from which it took its origin.—Levings, *Clinical Review*.

Typhoid Spine.

Lord (*Boston Medical and Surgical Journal*, June 26, 1902) analyzes twenty-six reported cases. The symptoms develop after the attack of typhoid fever; the time varies from the latter part of the disease to three months. Sometimes an injury or strain to the spinal column is found before the onset of symptoms. Tenderness, stiffness of the spine and sometimes swelling are the most common symptoms. Radiating pain is the most frequent of the nerve root symptoms. Evidences of hysteria and neurasthenia were noted in several cases.

The most interesting data concern the presence of a kyphosis, for from this, in connection with the nerve symptoms, the suspicion of an organic basis for the process is as far as may be confirmed by the clinical signs. Elevation of the temperature occurred in about half of the cases. The symptoms intermit, and relapses are common.

Acute Abdominal Symptoms Depending on Malarial Infection.

Jackson (*Ibid.*) calls attention to some acute abdominal symptoms which accompany certain cases of malaria, and reports several cases. The most marked of these symptoms are pain in the abdomen, tenderness of the epigastrium, vomiting and diarrhea. The abdomen may be very tender and distended and the diagnosis of septic peritonitis has been made. In fact, patients have been prepared for operation, when an enlarged spleen was found and the blood thoroughly examined. Without a careful examination of the blood the diagnosis of these cases is impossible.

The Origin of the Vesicular Respiratory Sound.

Hoover, at the American Medical Association, June meeting, reviewed the various theories in regard to the origin of the vesicular murmur. Laennec attributed the sound to the friction of the inspired air in the bronchioles and its entrance into the infundibula. These investigations remained unquestioned until Baas, on pure acoustic grounds, claimed that it was impossible for any audible sound to orig-

inate in tubes the size of the bronchioles from the passage of air at the very slow velocity which must attend its passage into the vesicles. Penzoldt's experiments sustained this view. He believed that the vesicular murmur was bronchial breathing transmitted through the inflated lung. The change of sound is accounted for by the refraction and partial reflection of sound waves. Sabli found that the sound transmitted through the inflated lung retained its bronchial character. Hoover's experiments confirm Sabli's contention. Only a vigorous use of the imagination could transform the audible sound through a distended calf's lung and normal vesicular breathing. The question, therefore, is still unsettled.

Elliott Test for Sugar.

Jaquith claims that repeated laboratory experiments for the purpose of comparing with other copper tests, and the daily use during the last two and a half years of the Elliott test, have served to demonstrate its superiority over other methods in use. The test solutions are prepared as follows:

REAGENT No. 1.

Sulphate of copper (C. P.).....	gr. 27
Glycerin (C. P.).....	dr. 3
Distilled water.....	dr. 2.5
Liquor potassæ.....	q.s. ad oz. 4

Dissolve the sulphate of copper in the glycerin and water; gentle heat will facilitate the solution. When cool, add the potassa, mix thoroughly and filter. Filtration should invariably be performed, as it secures greater stability.

REAGENT No. 2.

A saturated solution of chemically pure tartaric acid in distilled water.

Method of application: About one dram of the cupric oxid solution (Reagent No. 1) is poured into an ordinary test tube and brought to the boiling point over a spirit lamp. Then add three drops of Reagent No. 2, and boil again. After the addition of the tartaric acid solution no change in color is observed except a slight deepening of the blue color.

Add the suspected urine drop by drop, boiling, and shaking the tube between each addition until reaction occurs or until eight drops have been added. A yellow or reddish precipitate shows the presence of sugar.—*Medical Examiner.*

Significance of the Apneic Pause.

Sabrazes (*Gaz. Hab. de Bor.*) has observed that the apneic pause is five to ten seconds shorter in cases of mitral insufficiency than in normal conditions. The normal length of the pause after ordinary expiration, not preceded by forced inspiration, is from twenty to twenty five seconds. Pleural effusions and pneumonic foci also shorten the pause; while, on the other hand, it remains of normal length in pulmonary tuberculosis, even in the second stage.—*Journal American Medical Association.*

The Relation of Irregular Pulse to Cardiopathy.

Patton (*Medical Examiner*, May, 1902) discusses the relation of the irregular pulse to cardiopathic states. He agrees with Albutt that even intermittence developing in senile life does not necessarily indicate cardiovascular disease. Irregularity of the pulse has no other significance than a symptom demanding investigation as to its cause.

THERAPEUTICS.

In Charge of W. L. JOHNSON, M.D.

Massage of Ulcers.

Satisfactory results are claimed in the treatment of ulcers by massage (*Revue Internationale de Therapie Physique*, March 1, 1902), not only to remove surrounding sluggish blood and to give tone to adjacent tissue but to revivify the ulcer bed proper.

Massage of the surrounding parts is first effected in all cases; the ulcer is then washed with soap and further cleansed with some anti-septic solution. The index and middle fingers are then anointed with borated vaselin and rubbing of the edges is begun, this rubbing is done in a centrifugal manner, and pressure is exerted according to the turgescence or callous condition of the edges; in the latter case considerable pressure is used. The massage of the ulcer bed is done direct, without intervention of gauze or other protective. Each séance lasts ten minutes.

Treatment of Skin Diseases by Use of Cold.

Saalfeld (*Ibid.*) has made inquiries into the adaptibility of liquid air to certain diseases of the skin. Lichen planus, eczema, nevus, verrucæ and ulcers have been included in his experiments. He carefully swabs the affected focus with liquid air for ten to fifteen seconds, repeating the application for from three to ten times at a treatment. There is considerable reaction, followed by a scar, lasting from one to three weeks, and this by an erythema instead of the initial lesion. Epithelial warts are shed in from three and a half to twelve hours after an application. Instead of liquid air Saalfeld has used methylethyl, a mixture of chlorethyl with chloromethyl, which is more easy of application, is cheaper and can be prepared at any time. The most obstinate leucoplasias, as of the tongue, can be detached by means of this methylethyl.

Nature and Treatment of Sciatica.

Eshner (*Merck's Archives*, June, 1902), after touching on the nature of sciatica, deals with various methods of treating this trouble. Rest and the favorable position of the parts are valuable adjuncts. When the affection sets in acutely, eliminants are indicated; a mercurial followed by a saline will be useful; sweating may be produced by means of drugs (pilocarpin hydrochlorate, one-twelfth to one-sixth of a grain), or by heat; local bleedings may be practiced by means of leeches or wet cups, or a number of dry cups may be applied; hot compresses often afford relief, or again, cold, as ether, ethylen chlorid or rhigolene sprays, or applications of ice. Counter irritation with mustard, iodin, etc., or actual cautery. Deep injections of chloroform, ether or silver nitrate are sometimes necessary for relief. Electricity, massage, alternate hot and cold douches under pressure, following exposure to dry heat. Among drugs the salicylates hold a prominent place; they should be given in generous doses (ten to thirty grains three times a day) for not too long a period. With them various coal-tar derivatives may be advantageously combined.

In the acute paroxysm nothing affords the same immediate relief as a hypodermic injection of morphin, a quarter to a half grain, alone or in combination with atropin, $\frac{1}{200}$ grain, or cocaine, a quarter to a half grain, may be employed in the same way. Aconitine, $\frac{1}{200}$ grain, may be given by the mouth or subcutaneously, and aconite applied topically in the form of a liniment.

Among constitutional remedies, iodin, iron, arsenic, strychnia, quinin and cod-liver oil may be mentioned.

[Turpentine and even castor oil are held in high esteem by some and should not be forgotten].

Normal Saline Solution.

Heineck (*Ibid.*) writes very thoroughly on the medical and surgical uses of normal saline solution. He thinks that the use of saline intusions is as specific in its field of usefulness as that of any other drug we possess. There is no need of the more complicated solutions. It can be prepared with reasonable accuracy, when the urgency of the case demands that no time be lost, by dissolving a teaspoonful of salt in a pint of boiled and filtered water. The various uses are:

1. As an inexpensive cleansing spray in chronic hypertrophic rhinitis, also as a gargle.
2. In diphtheria—irrigation of the throat with hot normal solution gives much relief.
3. In skin grafting and to douche skin grafts previous to transplanting them.
4. As an irrigating fluid for wounds. When so used it should have been boiled for half an hour; it should be used warm. To irrigate the urinary bladder, also the stomach, uterus, etc; irrigation of the peritoneal cavity during and after operation.
5. In diarrheal affections. Injections of normal saline solution, whether intravenous, subcutaneous or rectal, raise the arterial pressure and hydrates the tissues. They quiet the intense thirst.
6. In the anemic form of asphyxia neonatorum. Heat to the surface, injection into the rectum of a pint of hot (115° F.) saline solution, the instillation into the mouth of ten drops or so of brandy, such are the primary measures of utility.
7. As a vehicle for medicaments used subcutaneously.
8. In surgical and puerperal infections.
9. In malignant syphilis.
10. Uremic poisoning, from one to three quarts injected into the bowel one to three times daily.
11. Puerperal eclampsia.
12. Before operative procedures, where patients are anemic. In collapse while patient is being operated upon.
13. In diabetic coma.

14. In vegetable poisoning, as toadstool.
15. In local treatment of burns.
16. To replace fluid of chronic hydrocephalus and meningocele, if alarming symptoms follow tapping.
17. In shock or collapse following large hemorrhages.
18. As a vehicle for nutrient enemata.

The salt solutions may be given :

(a) By the rectal route through a long rectal tube, after a cleansing enema, and elevation of the bed.

(b) Subcutaneous method. Select a region where cellular tissue is loose and easily distensible—as the axilla, the buttocks, the subscapular region or the abdominal wall. The site of the injection must be sterilized, the solution must be sterile, receptacle containing solution—everything sterile. Temperature of the solution 105 to 115°F. The solution should be kept at this temperature by immersion in hot fluid. About 700 cc. can be safely injected; introduce the needle while the fluid is flowing; avoid veins.

(c) Intravenous method to be used in very urgent cases.

Adrenalin.

A number of articles have appeared recently on adrenalin and suprarenal extract, but their indications are now pretty well understood. Kennedy (*New England Med. Mon.*, July, 1902) has, however, found the solution effective in curing chronic gleet. He passes sounds twice weekly and injected 1 to 20,000 solution of adrenalin. In less than two months the passage of a No. 14 sound caused neither pain nor hemorrhage, where formerly a No. 3 sound caused both.

Treatment of Cyclic Vomiting or Auto-Infection.

LeRoy (*Ther. Gazette*, June, 1902), after trying almost every known measure and drug in these cases, has found the following to give the best results, when given at the very onset of the attack :

R.	Pulv. myrrh et aloes.....	3ij
	Pulv. guaiaci.....	3iss
	Pulv. capsici	3j
M.	Triturate in a porcelain mortar to an impalpable powder, add:	
	Ol. cinnamoni.....	gtt. xxv
M.	Ft. caps. xxv. Sig.—A capsule every four hours until the bowels act in a free manner.	

Prescriptions.

Fermentative Dyspepsia, Nervous Diarrhea.

- R_s Strontii bromidi..... ʒij
 Bismuth salicylat..... ʒj
 Elixir lactated pepsin..... ʒiv
 M. Sig.—Two drams in a little water after meals.

For Rheumatism, Muscular Rheumatism, Gout and Auto-intoxication.

- R_s Strontii salicylatis..... ʒij
 Extract cascara sagrada fl. aromatic..... ℥xl
 Elixir pepsin q.s. ad ʒiv
 M. Sig.—One or two drams every three or four hours.

In Heart Disease, Asthma, Chronic Rheumatism, instead of potassium iodid.

- R_s Strontii iodid..... ʒij
 Essence pepsin..... ʒij
 M. Sig.—One dram in water three or more times a day.

In Nephritis, to decrease albumin without diuresis, and in Gouty Rheumatism and Gouty Glycosuria.

- R_s Strontii lactatis..... ʒiv
 Elixir pepsin..... ʒij
 M. Sig.—One or two drams diluted three or four times daily.

As an Intestinal Antiseptic.

- R_s Strontii salicylat..... gr. v
 Sig.—In capsule four times daily.

The strontium salts are valuable, especially the bromid, in certain gastric affections, as pointed out by Germain Sée in 1891. Nor are the pure salts at all poisonous. The cases as considered as due to strontium salts poisoning have been proven to be due to contamination by barium salts, chiefly barium oxid. One of our best intestinal antiseptics is the salicylate of strontium. H. C. Wood maintains that in gouty conditions and in lithemia, with intestinal indigestion, it is one of the most valuable drugs we have. DaCosta considers the strontium salts admirable diuretics in renal affections, acting better, however, in the acute than in the chronic forms of nephritis.

Carselli has found the bromids remarkably efficient in acute gastritis, and this salt and the lactate certainly reduce the amount of sugar excreted in diabetes.

Roche and others think the bromid the best salt in the treatment of epilepsy, at any rate it should be combined with the other bromids,

since a combination of bromids is admittedly better than one salt.

Cinchonism is occasionally produced by the salicylate of strontium but more rarely than with other salicylates.

Labordie highly recommends the bromid and iodid in exophthalmic goiter, and Gillespie has had success with this combination in the goiters of children.

Home Treatment of Tuberculosis.

Flick (*Ther. Gaz.*) considers drugs, sunlight, electricity and serums supplementary agents in the treatment of tuberculosis. The essentials are—first, fresh air; second, correct, adequate diet; third, regulation of consumption of energy. Fresh air as an agent in the treatment of tuberculosis means air which retains its full capacity for oxidation, or, in other words, *outsiae air*, free from the products of combustion. For all animal organisms a complete deprivation of oxygen for a few moments is fatal. This ought to give us some idea of what partial deprivation may mean when the organism is struggling against parasitic life. Air which has been breathed and rebreathed has not only lost some of its oxidizing power, but has been loaded with those substances which the organism is struggling to rid itself of. Under no circumstances should the room of a tubercular patient be warmed by any method which consumes the oxygen, such as by gas stove or coal-oil stove.

Flick thinks a good plan in feeding is to let the patient have one royal meal a day, preferably at mid-day. Other feeding at other times, of course, as milk, raw eggs, etc. Rest and exercise should be prescribed as carefully as fresh air and diet.

While there is much disturbance of circulation, as manifested by rise of temperature and increased pulse rate, the patient should take no exercise.

The most valuable drug is iodin and this by inunction of iodol, europhen, iodoform or aristol. These are all soluble in olive or cod-liver oil. Tonics are helpful, and calomel of great value when the digestive system is clogged. Nitroglycerin in hemoptysis, digitalis in heart weakness.

SOCIETY PROCEEDINGS.

MEDICAL SOCIETY OF CITY HOSPITAL ALUMNI.

*Meeting of April 24, 1902; Dr. Given Campbell, Jr.,
President, in the Chair.*

Dr. W. T. COUGHLIN read a paper (see page 182, this issue) on

Aneurysm of the Transverse Aorta.

DISCUSSION.

Dr. GEORGE HOMAN said he often wondered at the direction in which the force of an aneurysm will be expended. In the specimen shown this evening the direction seemed to be forward and upward. Some years ago he saw a case at St. Luke's Hospital where the extent of the osseous ravages of the disease was simply remarkable. The aneurysm involved the same portion of the aorta as this specimen and the patient seemed to be pretty comfortable. He died suddenly one morning from rupture of the sac, the blood filling the entire cavity of the chest. The autopsy showed that the second and third ribs on the right side were eroded through, and also the corresponding vertebræ, exposing in part the spinal cord. The right scapula was pushed far upward and outward. What determines the direction of the force is a question in dynamics that he was not able to explain. It does not seem to be influenced by resistance for, apparently, the firmer the resistance the more the destruction.

Dr. N. W. SHARPE was not inclined to agree with Dr. Homan in regard to the dynamic theory of the development of an aneurysm. It is rather generally conceded that save in traumatic aneurysms, the ballooning of the blood channel is due primarily to a pathologic defect in the integrity of the wall of the artery. If it be granted that a mural defect is the prime etiologic factor, it follows that that portion of the wall which is most profoundly invaded will be the one that will soonest give way. We may also conclude that under ordinary circum-

stances the greater the defect, the greater subsequent cavity; provided, that in the diseased vessel, blood pressure is sufficient to produce a macroscopic aneurysm.

The osseous destruction so commonly noted is much like the water drop wearing away the stone. The unremitting exertion of a gentle force sometimes produces remarkable results. We all know how the rectum will frequently remain patent notwithstanding the pressure of a uterine fibroid that has moulded itself between the symphysis and sacrum. In fact, it is not uncommon to observe a distinct sulcus where this gentle force has overcome the fibroid encroachment. In like manner aneurysmal pressure is competent to destroy bony tissue. Perchance the constant pressure prevents successful reparative progress, for bone repair is relatively sluggish as compared with more vascular structures. This, however, is really a matter for the histo-physiologists.

The PRESIDENT called attention to the history of this case and the apparent sudden starting of the aneurysm. The point brought out by Dr. Sharpe seems to be well taken that the direction depends upon the first injury to the arterial wall, in this case a sudden giving way of the atheromatous wall, which is rather more clearly shown than usually.

Dr. F. REDER could readily see how the continued pressure of the arterial current would cause a giving way of the tissue, especially when we presume that it is destroyed by disease; but why the whole is afterwards absorbed and how it is accomplished is a pretty deep pathological question. He did not think it could be explained on the theory advanced by Dr. Sharpe.

It is a regretful feature of the disease that the interest centers itself in the specimen after the diagnosis has been made. That, of course, means after the patient has died. A prolongation of life may be some consolation to the patient but is very little to the physician. The iodid of potassium is the anchor in the treatment and will probably always remain so. Other treatment is the use of gelatin. The introduction of wire has its disadvantages and very few advantages.

He had made a diagnosis of aneurysm in a patient who had been the round of doctors. The patient complained of hoarseness, which would not yield to treatment, and a diagnosis of aneurysm of the arch was made. The patient left the hospital apparently well, but in eight months returned and then the aneurysm was easily made out.

In another case a patient was sent to him for operation for renal calculi. He could find no signs of calculi and asked for time to study the case. In passing his hand over the region of the kidney he felt a pulsation, which proved to be an aneurysm. He sent the patient home, where he died three weeks later. Post-mortem showed an aneurysm of the aorta, about the size of an orange, below the diaphragm.

In response to Dr. Coughlin's question about treatment, the speaker said the iodid of potassium gives good results. As long as the resistance of the tissues lasts there will be a prolongation of life. Rest is probably the greatest factor, but there again it is only a question of time before the tumor will overcome the resistance of the tissues. Tonics are always indicated to keep up the general strength of the patient and he should get a proper amount of sleep. Rest and a pleasant environment are about all that can be done for them.

Dr. FRANCIS REDER read a paper (see page 167, this issue) on

Inguinal Hernia.

DISCUSSION.

Dr. SHARPE said the object of the suture in this locality was to grasp as large an amount of tissue and retain it in position with, at the same time, the smallest amount of pressure. Elsberg, in his demonstration experiments upon the suturing of the heart muscle, showed that the interrupted suture inserted at right angles to the line of incision grasped the smallest amount of tissue, and can be tied with a small degree of pressure. We may, therefore, judge that the mattress suture may be induced to grasp a large amount of tissue, the amount of pressure being determined entirely by the skill of the operator. It would then seem entirely logical to use, unless there was a special contraindication, a mattress suture of catgut, or some animal material, which is intrinsically difficult of digestion, or has been hardened. As opposed to that he would venture to suggest the use of silver wire for aponeurotic structures, in selected cases.

He was a little at a loss to understand two statements in the paper: The first being that the essayist would use moist gauze as a dressing, and later on made the statement that it was quite essential that the wound and environment should be kept dry. He thoroughly indorsed the second statement—everything should be as dry as possible to diminish the possibility of dead spaces.

He would advise that in selected cases the suture material for aponeurotic tissue be silver wire, but we must have a dry, sterile external dressing. This latter is well obtained by employing many layers of sterile silver foil. The failure to secure ideal results in the use of silver wire, both as a suture material and of silver foil as an external dressing, is frequently due to the fact that pure silver has not been employed. There is quite a marked difference in the results obtained by the use of ordinary silver and the virgin metal.

In regard to the difficulty one might encounter in ligating vessels, as suggested in the second case, it would not seem unreasonable to advise, if the vessels were brittle, showing evidence of calcareous degeneration, or if there be any other reason to suppose that there would be subsequent leakage, a good plan to follow would be the covering of the vessel ends with peritoneal tissue, so that by plastic exudation the risk of a secondary hemorrhage would be reduced to a minimum.

Dr. REDER, in closing, said his remarks about keeping the wound dry, had reference to that part of the operation that involved the tissues while yet in an open state. The object is to have absolutely nothing in the wound—no oozing while placing the sutures. The application of the bichlorid dressing to the external wound would have little effect in causing moisture in the deeper structures. It is a dressing that will dry within ten hours from bodily heat. It was used extensively in the German Hospital during his time there and no ill effects followed.

Many operations are still practiced there, though they are gradually giving way to the Bassini. The Kocher method differs from the others in the incision being made through the skin, but the aponeurosis of the external oblique is not laid open until opposite the internal ring. A slit is made in this tissue, the forceps introduced down to the internal abdominal ring and the stump sewn to the tissues in the neighborhood of the external oblique.

Anesthesia During Sleep.—In an interesting article on this subject (*Therapeutic Gazette*) the conclusion is expressed that it is possible to produce anesthesia during sleep, chloroform is especially adapted for this. The patient on awakening has no recollection of anything apart from the sleep.

REPORTS ON PROGRESS.

MEDICINE.

In Charge of A. LEVY, M.D.

Anuria.

Moschcowitz (*Medical News*, August 2, 1902) reports an interesting case of suppression of urine. The patient gave a previous history of malaria and abortion. A diagnosis was made of pyelonephritis on the left side and the suppression of urine on the part of the right kidney was thought to be reflex. Upon operation, the left kidney was found to be greatly distended, containing about 1000 cc. of fluid and no calculus.

The right kidney contained several drams of pus. The right kidney was later removed on account of continued high temperature, and examination of the kidney thus removed showed it to consist of nothing but fatty and fibrous tissue. The patient recovered.

The Cause of Deficiency of Hydrochloric Acid in Carcinoma of the Stomach.

Reissner (*Zeit f. Klin. Med.*) makes the rather surprising statement that his experiments show that in many cases of carcinoma of the stomach, the excretion of chlorids into the stomach is increased instead of diminished. He says that HCl is found clinically to be deficient because it is neutralized by abnormal secretion of alkaline substances, caused, he thinks, by the carcinoma. He believes that the gastric contents become changed chemically only when ulceration of the carcinoma occurs and that this ulceration reduces the HCl.

Hour-Glass Stomach.

Mognihan (*Edinburgh Medical Journal*, June, 1902) diagnoses this condition by inflating the stomach by means of the gas evolved from the administration of Seidlitz powders. He first percusses the empty stomach and then administers the Seidlitz powders in two halves.

A great increase in the resonance of the upper portion of the stomach with no change in the lower or pyloric segment would be indicative of hour-glass stomach. If the abdomen is observed for a few minutes, the lower segment or pyloric pouch will often be seen to become distended. The author then reviews a list of fourteen cases which came under his observation.

Acute Syphilitic Fever.

Senator (*Berliner Klin. Woch.*, May 19, 1902). The difficulty of diagnosis in acute syphilitic fever is shown by the author when he points out how this condition must be differentiated from measles, variola, scarlatina, varicella, typhus, typhoid, bubonic plagues, dengue, acute articular rheumatism and even acute yellow atrophy and catarhal jaundice may present clinical pictures so similar to that of acute syphilitic fever as to be differentiated with difficulty.

A Case of Fistula Formation Between the Gall-Ducts and a Bronchus.

Eschenhagen (*Deutsche Med. Woch.*, No. 30, 1902) describes a case of fistula established between the biliary passages and a bronchus. The early history of the case was the ordinary history of cholelithiasis and cholangitis; later, multiple abscesses occurred in the liver, one of which opened spontaneously through the diaphragm into the bronchus of the right lung. A biliary fistula was established in this way which persisted up to the time of the patient's death. The sputum was yellow colored and gave all the reactions for bile. Post mortem verified the diagnosis. The patient also suffered from tuberculosis.

Treatment of Gastric Ulcer.

Heiner (*Munch. Med. Woch.*, June 3, 1902) lays stress on prolonged rest in bed as soon as the diagnosis is established. For a few days the patient should receive absolutely nothing by the mouth, as the empty state of the stomach favors healing. The lips and mouth may be kept moist by cold wet applications. In case of meteorism an ice bag may be applied.

After several days a strict milk diet may be begun; afterwards arrowroot, rice flour and cream may be gradually added. This diet is increased by the addition of broths, and by the end of the fourth week, chicked, pigeon and tender lamb may be tried.

Rare meats and vegetables are not to be given until the end of the sixth week. Of the vegetables those which are easiest digested are spinach, turnips, cauliflower and asparagus tips. Only cooked fruits should be given.

Uncinariasis.

American Medicine, of July 19, 1902, contains three articles on uncinariasis or ankylostomiasis. Harris reports a case in an individual presenting all the typical symptoms of pellagra. In the spring and early summer the disease manifested itself most strongly. After a thorough course of treatment with thymol, and about six hundred worms having passed, the patient was much improved, but some of the symptoms persisted, suggesting that he also suffered from true pellagra.

Guiteras corroborates Stiles' assertion that a new species of the uncinaria are found in America, which has been named *Uncinaria Americana*.

Dr. Herrick reports a case from Washington, D. C., in the case of a soldier infected by the *uncinaria duodenalis*, or the Old World hook-worm.

SURGERY.

In Charge of

A. V. L. BROKAW, M.D., and E. C. GRIM, M.D.

Why Should We Not Treat the Gall-Bladder as We Do the Appendix?

Roswell Park, of Buffalo, (*Canadian Practitioner and Review*, June, 1902) calls attention to the similarity in structure, function and pathological processes of the two organs, and either, when diseased, has a similar influence on the neighboring organs.

Replying to his self-asked question, he says: Such is not my custom nor my teaching. Whether, then, the case be acute and fulminating, or chronic and growling, I would say, that like the diseased and troublesome appendix, the diseased and troublesome gall-bladder should come out, and that we should formally include cholecystectomy as the ideal operation corresponding to appendicectomy. My past year's experience with a relatively large number of these cases has

taught me that one is no more dangerous than the other, and is equally satisfactory. I now scarcely think of leaving an evidently diseased gall-bladder, after exposing it, any more than I would think of a partial operation upon the appendix.

It is fair to maintain that when the gall-bladder is occluded and contains calculi with old, more or less inspissated or altered mucus, it has ceased to functionate as a gall-bladder, is more than useless and is a source of offence.

When it is removed it can no longer furnish calculi which will cause trouble within the ducts or which will provoke or irritate the pancreas.

Cause of Death in Strangulation of the Small Intestines.

Albeck (*von Langenbeck's Archiv; Central. f. Chir.*, No. 16, 1902) made an experimental and clinical study of the cause of death in obstruction of the small intestine. He refers to Buckbinder's experiments which demonstrated that slight circulatory disturbances do not permit the entrance of bacteria into the circulation through the mucous membrane. A gangrene of the intestinal wall is necessary. In most cases of strangulation, peritonitis is the direct cause of death, but in a certain number of cases no peritonitis was found, so that the conclusion is rational that they died of intoxication.

The author made experimental study on animals, the intestine being tied with a cord. Very rapidly a group of severe symptoms developed. The animals were examined at once after death, and a great variety of micro organisms were invariable present in the peritoneal cavity. In a few, evident signs of peritonitis were found.

An experimental study of the intestinal contents proved that it possesses a great toxicity. All animals receiving an intravenous injection of this fluid, which had been filtered through a Chamberland filter, promptly died with symptoms resembling the clinical picture produced by the strangulation. Boiling the fluid did not diminish the toxicity.

He concludes that a putrid poison is formed from the intestine and contents, and being absorbed, induces the grave symptom complex, which ends in death.

NEUROLOGY.

In Charge of M. A. BLISS, M.D.

Acroparesthesia (the Paresthetic Neurosis).

Joseph Collins (*Medical Record*, May 31, 1902) gives the analysis of one hundred cases and calls attention to the fact that Putnam, of Boston, was first in describing this condition, which later was given its present name by Schultze, of Bonn, from acros, extremity, and paraesthesia, abnormality of sensation. Although considered as a symptom complex, Collins sees many reasons for classing it as a disease, and in his clinic the diagnosis was not made where any basis could be discovered in other diseases.

He cites a typical case in a widowed dressmaker, who was wakened several times during each night with painful sensations in both hands and arms as if they had gone to sleep. After some exercise of the muscles affected the sensation would disappear, only to awaken her again soon after she returned to sleep.

The paresthesia is described as numbness, pins and needles tingling, stinging, etc., and there is usually a subjective unwieldiness, which in severe cases may become objective.

Nothing, as a rule, can be made out on physical examination except slightly diminished sensation in rare instances. No change occurs in color or temperature of the skin.

One hundred cases were cited in the effort to determine what influence age, sex, race, occupation, season and previous disease may have in causation. Nothing very definite is determined by this investigation except that those engaged in sewing under unfavorable conditions seem more likely to be affected, and also those whose occupation compels them to keep their hands in water—as dishwashers.

Acroparesthesia stands in close etiological relationship to occupations that produce fatigue and exhaustion and it may be looked upon as a fatigue neurosis with a possible toxic accompaniment.

Constipation seems to bear some relation to the condition.

Prolonged rest, nourishing diet and new environment are essential to a cure in most cases. Tonic hydrotherapy, the cold splash bath, or half bath at 75 to 65° F., followed by vigorous friction, especially to the spine and abdomen; regulation of diet, especially increased fre-

quency of taking food; enforced rest, as lying down an hour at noon or before supper; and iron, arsenic and strychnin. Electricity is useful and usually so grateful that the patients regularly return for its application. Bromids and phenacetin may be used temporarily for relief while other measures are being used.

Spastic Spinal Paralysis.

William G. Spiller (*Philadelphia Medical Journal*, June 21, 1902) reports the histories of two cases of this condition in a father and son, and cites the occurrence of the disease in twelve other members of the same family.

Struempell is quoted as finding degeneration of the pyramidal tracts most intense in the lower thoracic and lumbar regions. The degeneration did not extend above the pyramids. The columns of Goll were slightly degenerated in the cervical region; the nerve-cell bodies of the anterior horns were perfectly normal; the cerebellar tracts may have been slightly degenerated.

Erb, Hochhaus and Souques are quoted as describing cases in which the disease commenced in early childhood and was not confined to male members of the family.

Erb holds that the disease is due to degeneration of the pyramidal tracts in the lower portion of the spinal cord and not to be of cerebral origin. His two cases were sisters, children of related parents. The disease began in each at the age of 4 years.

In Spiller's first case the disease began at the age of 5 years. The patient was 32 years of age when examined. Very little voluntary movement was present in the toes and feet; walking was possible, but very spastic; sensation everywhere normal; knee-jerks exaggerated; ankle clonus and Babinski reflex very marked.

In the son, aged 8 years, the first symptoms were noticed at the age of 18 months. Gradually the condition became almost identical with that of the father. He walks on the outer part of the feet, which are in the position of talipes equinovarus; sensation everywhere normal. The power of voluntary movement in the toes and ankles is very slight.

GYNECOLOGY.

Fibroma of the Vulva.

Thomass (*Centralblat f. Gyn.*, June 21, 1902) reports a case of fibroma of the vulva, which must be classed with the rarest of vulval tumors. The patient was a nullipara, aged 17 years, who was healthy during childhood. Menstruation first appeared at the age of 15 years and was always regular. Three months previous the patient noticed a tumor, about the size of a hazelnut, situated on the vulva. When it commenced to give her pain in walking and had attained large size she consented to have it removed.

Examination revealed a hard mass, without pedicle, on the anterior vaginal wall near the vulval outlet. The tumor was removed and complete healing was prompt. Microscopically the tumor consisted of firm connective tissue.

Exercise in the Puerperium.

Bacon (*Jour. Am. Med. Ass'n*, August 16, 1902) recognizes that rest in the puerperium is necessary for the recuperation of strength which has been exhausted during labor; it also prevents splanchnoptosis, to which there is a great tendency, since the abdominal wall is so flabby and gives insufficient support to the abdominal organs. The horizontal position should be maintained until the abdominal muscles have regained their tone.

The objections to rest are that it induces muscular weakness, poor circulation and impairment of the secretions and excretions. These disadvantages may be overcome by the systematic use of massage and exercise.

Ovarian Pregnancy.

Thompson (*Am. Gynecol.*, Vol. VII, No. 1) declares that thousands of cases of ectopic gestation are found recorded in medical literature; most of these are of the tubal variety. Occasionally a case is described as tubo-ovarian, tubo abdominal, abdominal or ovarian. The question as to the possibility of gestation occurring primarily in the ovary or in any part of the abdominal cavity has been the subject of much discussion. A few well-authenticated cases have been reported. It is necessarily very seldom that the spermatozoon can find

its way through the rupture on the surface of the ovary into the Graafian follicle and there fecundate an ovum still *in situ*.

He reports a case. The patient was 32 years old, II-para, no miscarriages. Seven years ago she had some pelvic trouble, the exact nature of which is not known but which incapacitated her for several weeks. She has had pains since; menstruation regular, amount never excessive.

Menstruation did not cease, but the pain in the pelvis being very severe, and a swelling and great tenderness being detected on the left side, an exploratory operation was performed.

The left ovary was enlarged and on the inner and upper border a dark-red tumor was found; it was removed. In this tumor was found a fetus, 1.2 cm. in length, attached to the wall of the ovisac by an umbilical cord.

Retrodisplacement of the Uterus.

Davenport (*Ibid.*) asks what methods of non-operative treatment of retrodisplacement of the uterus are at our disposal? What are the indications and what are the results?

As regards the first question, the methods of non-operative treatment, that by pessaries suggests itself at once as the most obvious and the most important; other treatments are massage and electricity. The distrust of the pessary has been carried too far.

The pessary will relieve symptoms, and many patients are perfectly contented. The opinion that no cure results from the use of the pessary is erroneous; but the cure can only be obtained in about one-third of all cases, and then only under careful, intelligent and scientific study of each individual case. When the subject of the employment of the pessary has been mastered, much can be done.

The following principles when adhered to will make the treatment of retrodisplacement a success:

1. Study the case. Determining the probable length of time that the displacement has lasted, its possible cause, the symptoms it has caused, then order of occurrence, and the relative importance of the general and local manifestations, and from these data form a careful opinion as to the chances of cure by one or the other methods of treatment.

2. In a case of retroversion or flexion always replace the uterus

before adjusting the support. The pessary should not be relied upon to do this, as only in the rarest case will it be possible.

3. In fitting a support choose one which fits exactly, if possible, but if not have it rather too small than too large.

4. The ideal pessary is one which supports the uterus perfectly and without the patient being conscious of its presence.

5. The patient should be kept under observation while she is wearing the pessary and seen at regular intervals, preferably after each monthly period, for the cleansing of the support and its replacement.

6. When it is deemed wise to make an attempt to go without it, it should not be removed at once but a smaller one substituted to be worn a month, and then a still smaller one, which finally may be removed.

On Compression-Therapy.

Pincus (*Volkmann's Samm. Klin. Vort.*, April, 1902; *Ibid.*) discusses the method of treatment in pelvic disease. It comprises the principle of the incline plane in conjunction with compression obtained by the use of quicksilver and the like. He concludes that this method accomplishes results peculiar to itself and, therefore, fills a gap in therapeutics. It may also act as a substitute for narcosis in making diagnostic examinations.

The fundamental principle of the treatment is the association of posture with compression, each factor being complementary to the other. As a collateral element of treatment the author includes respiratory gymnastics.

When the incline plane is used alone the results obtained are less satisfactory, although never injurious. The failure of resorption when due to poor general condition may be antagonized by this resource. But compression should never be used without the incline plane, either permanently or intermittently. The compression may be exerted externally or through the vagina, preferably by both together.

The chief indication for this plan of treatment is the pronounced pelvic exudate which does not cause rise of temperature during menstruation. It is also our best resource for reposition of the retroflexed gravid uterus.

In parametritic exudates and other similar conditions of the pelvic floor, intravaginal compression by the mercury bag is the principal

resource and external abdominal compression the adjuvant. But, when the exudate is high up, the conditions are reversed. Here external compression by the shot bag, etc., plays the chief rôle. Old chronic cases of pelvic exudate may be treated at home by the aid of the author's mercury-bag and an elastic abdominal bandage. The amount of mercury should gradually be increased and then diminished. Surgical treatment of pelvic exudates is contraindicated until the compression therapy shall have been fairly tried, unless virulent pus is present in the pelvis.

The Present Status of Operations for Cancer of the Uterus.

Hense, who is connection with Prof. Winter's clinic at Königsberg, has contributed an article with the above title in the *Berliner Klinik*, May, 1902. Of the numerous new procedures for the removal of uterine cancer, each has well-marked drawbacks, and no one method offers any degree of superiority over its fellows. There is no doubt that operative intervention holds out the sole prospect of cure in these cases. There are at present three degrees of intervention, viz.—extirpation of the diseased focus, removal of the entire uterus and the complete ablation of the uterus, parametria and lymph nodes.

The operation of extirpation of the diseased focus may be subdivided into simple amputation of the portio, supravaginal amputation of the cervix and amputation of the corpus by the abdominal route. Of these, the first and third have become obsolete as insufficiently radical. Supravaginal amputation of the cervix, on the other hand, is still in use.

In regard to the operation for extirpation of the entire uterus, three routes are in vogue, viz.—vaginal, sacral and abdominal. Of this number, the sacral route alone has fallen into disrepute, as having a high primary mortality and no advantage over competitive methods.

Finally, the ultra radical procedure of extirpating the pelvic connective tissue and lymph nodes with the affected uterus has been carried out by three different methods, viz.—the amplified Freund operation, Amann's transperitoneal laparotomy and Mackenrodt's hypogastric laparotomy.

Of the nine modes of intervention just enumerated, several are deserving of especial mention. Thus, the supravaginal cervical am-

putation has certain advantages in mild and incipient cases in that it makes it possible for the woman to conceive again and avoids all dangers incidental to opening the peritoneal cavity and to extirpating a corpus uteri which adheres to the contiguous structures. It is self evidently well adapted to cases in which great general weakness is present.

The advantages of the ordinary vaginal extirpation in given cases are sufficiently well understood. The original Freund operation of abdominal extirpation of the uterus, once regarded as the method of the future, has been supplanted by the so-called amplified operation, in which the parametria and lymph nodes are extirpated with the uterus. The latter method is still upon trial. The high primary mortality of the earlier operators is being slowly reduced by improved technic, but we have not as yet any data as to ultimate results.

The high primary mortality of the amplified Freund operation also led to attempts in a more conservative direction. Thus, the methods of Amann and Mackenrodt already enurmerated, are largely extra-peritoneal in character, although extremely radical in scope. They have thus far been employed in but few cases, with very low primary mortality.

PEDIATRICS.

In Charge of M. J. LIPPE, M.D.

Intussusception.

Francis Huber (*Archives of Pediatrics*, July, 1902) reports a case, and summing up his experience, draws the following inferences:

1. The urgency of the symptoms will depend upon the situation and the degree of obstruction or strangulation. The more acute the case the more outspoken are the symptoms and the greater the danger.
2. The higher up the lesion the more marked are the gastric symptoms.
3. In the enteric variety, the least frequent form in children, a palpable tumor is the exception; the usual variety is the ileocecal.
4. Pain is a constant symptom, it is sudden in its onset, of great intensity and attended with screaming spells, and, moreover, is paroxysmal.

5. Vomiting sets in early, and is persistent and uncontrollable. The antiperistaltic movements of the stomach are evident when the abdomen is exposed for inspection. Fecal vomiting is rare in infants.

6. At the onset one or more fecal movements are observed, followed by clear blood or bloody mucus resembling currant jelly, the latter occurring particularly after the paroxysm of pain.

7. Finally, the tumor may be present at the anal orifice.

8. Conjoined abdominal and rectal exploration under narcosis may reveal a tumor, not discoverable by simpler means.

9. The general expression is one of more or less shock, cold extremities, eyes sunken and collapse. Later on, sepsis, peritonitis or gangrene change the picture and render the prognosis more dangerous. Reduction by hydrostatic pressure, as recommended by Jacobi, may be tried early, and if this fails, the case should be turned over to a surgeon for operation.

SURGICAL COMMENTS.—Edman says operation for intussusception is accompanied by a far less mortality rate than that which occurs when hydrostatic pressure, inflation, etc., are practiced and is the only treatment when a case has passed the twelfth hour period of duration.

Unfortunately for all, the rate of mortality rapidly increases for every added twelve hours, and after the third day the rate of recovery is so small that one is discouraged when considering it in the surgical sense.

The operation is an extremely simple one, requiring asepsis and expedition more than anything else during the first twenty-four hours, and rarely, except in long-standing cases, is exision of the gut required.

The position of the incision depends, to a degree, upon the presence of the tumor, that is, its location.

Usually, it is not necessary to stitch the gut, mesentery or mesocolon to the parietes for the usually-ascribed cause of long lax mesentery or mesocolon.

Temporary adhesions form as a result of the congestion and edema of the gut that is finally extruded from the intussuscipiens.

Hydrocephalus.

Hunter (*Pediatrics*, August 15, 1902) reports a case of hydrocephalus in an infant 2 months old, which was cured by operating according to the theory of Leonard Hill, namely, that a communication between the lateral ventricles and the subarachnoid space must

exist, as it is the veins in the soft membranes that absorb any excess of fluid. It has been abundantly demonstrated that in all cases of hydrocephalus Magendie's foramen is closed.

Bruce and Stiles operated on two cases, in which fine catgut was forced through the cortex into the lateral ventricles. The result as far as the hydrocephalus was concerned was encouraging.

Hunter's case was a baby 2 month old. Its head measured 21 inches in circumference, and this enlargement had occurred in the last month. The bones were widely separated, the eyes protruded and the infant was blind. There was high fever and intense restlessness. Three or four strands of No. 0 catgut was pushed through the cortex into the lateral ventricle, after removal of the cranial vault and an incision into the dura; the fluid gushed up like an artesian well. The improvement was remarkable and the head returned to its natural size. After eight weeks there was a reaccumulation due to a closure of the opening. Another operation was performed and five strands of No. 7 catgut inserted.

The child improved, grew rapidly and seemed just like other children. At present the child has well-developed lower extremities and walks and runs about as other children.

Surgical Erysipelas Treated With Antistreptococcic Serum Without Benefit.

Kosenthal (*Pediatrics*, August 15, 1902) reports six cases of erysipelas, occurring mostly in childred, which were treated with anti-streptococcic serum; all cases were surgical erysipelas. No benefit was derived from the serum.

[The value of the report is weakened by the fact that no cultures were made and it is impossible to decide clinically whether a given dermatitis depends on the streptococcus erysipelatus.]

OPHTHALMOLOGY.

In Charge of W. A. SHOEMAKER, M.D.

The Cosmetic and Visual Results of Squint.

J. M. Ray (*Journal American Medical Association*, November 2, 1901) concludes his paper with the following observations:

1. The effect gained in the treatment of strabismus, whether par-

allelisms of the visual axes be obtained by a cycloplegic, glasses, or-thoptic exercise or an operation, is largely, or we might say, wholly cosmetic.

2. Glasses should be adjusted to the eyes of squinting children at as early an age as possible, depending upon the ability of the parents to control the child, and they should always be worn for a sufficient length of time to determine their effect upon convergence, before any steps in the way of an operation are undertaken.

3. The use of the exclusion-pad and orthoptic training are advisable, not so much in the hope of increasing the vision in the squinting eye, as to improve the power of co ordination in the recti muscles, so that when the child reaches the proper age for operation the power of simultaneous muscle action will not have been lost.

4. Binocular single vision is not present in more than 7 per cent of the cases of squint, and its production in a larger percentage uncertain and unsatisfactory. Parallelism of the visual lines does not mean binocular single seeing.

5. Double images are not necessary for a successful issue. Cosmetic results can be obtained and maintained where the fusion power is absent. This is true in monocular squint with great amblyopia as well as the alternating form.

6. Congenital amblyopia is often found in eyes that do not squint, especially combined with hypermetropia and astigmatism, and often in members of a family where squint in others is present.

7. In alternating squint if the hypermetropia is of a high degree the chances of producing parallelism are better than when the hypermetropia is low. In alternating squint with hypermetropia of a medium degree the necessity for an operation and the difficulties of producing parallelism by tenotomy are greater than in monolateral squint.

8. The effect of tenotomy is greatly influenced by the amount of abducting power present in the corresponding externus. This should always be especially noted in the alternating variety.

9. Two tenectomies on the same internus is bad surgery, since it invariably leaves a sunken caruncle and later divergence.

10. From a cosmetic standpoint the correction by operation is not as simple as might be supposed. What is gained by straightening the eye is lost if there is left a noticeable exophthalmos with limited motion of the eye both outward and inward.

Infantile Ophthalmia.

E. Treacher Collins (*Practitioner*, London, April 1, 1902) summarizes the measures which at the present time are best qualified to reduce the amount of blindness in ophthalmia neonatorum as follows:

1. Compulsory notification of cases of ophthalmia neonatorum by all persons attending women in labor other than medical men.
2. Instruction as to the importance of the universal adoption of prophylactic measures (preferably Crede's method, or the use of a sublimate solution, 1 in 2000, or protargol 20 per cent) by all lecturers and writers of text-books on midwifery.
3. The appointment of ophthalmic surgeons to maternity institutions, more especially those which provide for attendance of women at their own homes.
4. The provision in all midwifery bags of a drop bottle labeled "drops for the eyes."
5. The better training of monthly nurses in the methods of aseptic cleanliness.

Iridectomy in Glaucoma.

The following is an extract from a letter received from Dr. George J. Bull, of Paris:

"During the debate before the French Congress of Ophthalmology, in May, on DeWecker's report on the value of iridectomy in glaucoma, Dr. Emile Javal, now totally blind in both eyes from glaucoma, was led into the room by a servant and took one of the front seats. One speaker after another expressed his opinion on the subject, only to show that little is known with certainty, and that we have to do with a disease which is far from being properly understood. At length Javal was called on to speak, and not rising, as did the other speakers, he turned in his chair toward the center of the room and began his remarks in a low tone. The gentlemen in the farther parts of the room stood up and came nearer, the better to see Javal and to hear him, and presently all were standing except the speaker and those in the few seats around him. It was a dramatic scene, not to be forgotten; the sightless speaker, eyes covered with dark-blue spectacles, his neck scarred from an operation to excise the sympathetic ganglion, a wounded soldier, indeed, and the older men in the group around him, and the younger men beyond, bending forward the better to hear the soldier's story. From time to time Javal ceased to speak, but no

one broke the silence, for it was seen that he was reading with his fingers the notes he held on the table.

"And yet no one has brought us the solution of the problem."—*Ophthalmic Record.*

French Medical Literature.

Translated by A. S. BLEYER, M.D.

Recurrent Pseudo-Intestinal Obstruction.

Debove (*Jour. de Med. et Chir.*, May 10, 1902). The case is one of a man, aged 36 years, Hebrew, neurotic and of neurotic antecedents, who, since his 19th year, passed through ten or twelve seizures of intestinal obstruction, for which, in almost every case, surgical interference was advised. The symptoms were always very marked; great distension, especially in the sub-umbilical region, tenderness, pyrexia, absolute arrest of all bowel movement—gas as well as fecal matter, dyspnea and urinary retention. In most of the attacks there was no vomiting. After a period of from two to three weeks all the symptoms would suddenly abate, a copious movement with the passage of a great amount of gas occurring.

Medication.—Lavage, massage and every other method of treatment proved of no avail during the attacks.

Debove considers the condition one of intestinal strangulation of nervous origin. Since, besides the fact that the condition always relieves itself, removing all suggestion of other foreign cause, there is added the fact that the attacks have invariably been precipitated by some emotion or excitement.

The patient's brother has attacks identical to that described, though of less frequent occurrence.

Chronic Segmentary Edema.

Debove (*Ibid.*, April 25, 1902). An edema restricted sharply to a certain segment or to segments of the body—as the calf of one leg, the thigh, etc., was mentioned by Vigouroux in 1899. The author reports two analogous cases of even more striking character.

One patient, a woman, aged 22 years, of negative antecedents, developed a marked tumefaction of the right calf and then of the right thigh. Save slight occasional lassitude there were no accompanying

symptoms. Her physical condition was found irreproachable. After five months a similar process became manifest in the left leg, but this enlargement never attained the proportions of the one on the right, which persisted, unaffected by all treatment.

The other patient, a young adult woman, had suffered from a marked tumefaction of the same non inflammatory nature of the right calf and right thigh, for ten years.

The joint movements are in no way impeded because the edema remains sharply away from them. The patient is able to walk long distances and is occasioned no material distress. In this case the occurrence of the edema was coincident with the first menstruation.

Neither hysteria nor derangement of the thyroid gland can be brought into the etiology of the case, although a localized myxedema has been suggested as has also a disturbance of trophic character been offered by Meige (tropholdema). The unimpaired sensibility and movements of the parts, however, do not support this view.

Optic Neuritis Caused by Thyreoidin.

Coppez (*Le Prog. Med.*, March 22, 1902) reports five cases of obesity which, during treatment by the administration of thyreoidin, developed an optic neuritis of a severe type. The trouble occurred during the third month of continuous exhibition of the extract, and disappeared with its withdrawal.

Experimentally on dogs, he has produced optic neuritis from prolonged administration of thyroid extract.

The author believes the condition to be the result of a partial retrobulbar cystic neuritis.

Experimental Medicine.

Laffont (*Ibid.*, April 26, 1902) has undertaken a series of experiments of rich promise, his aim is to ascertain the exact action of certain well-tried remedies, prescribing them during their absorption in their original state as far as possible from contamination with such secretions of the body as might effect a change in their molecule.

He finds Gautier's dimethylarsinate of soda (a cacodylic preparation much exploited in France at present and of high value as a tissue reconstructive in conditions of body waste) possesses a very large amount of assimilable arsenic in a non-toxic form. It is prepared by

the substitution of a methyl group to arsenic acid; this is effected by the addition of cacodylic acid.

The product is superior to any arsenical preparation on the market but has the drawback of splitting up too soon after ingestion by the mouth and producing nauseating tastes, that prevent its continued use for very long.

A preparation of LePrince, the disodium monomethylarsinate, overcomes this difficulty, but is more toxic. According to Laffont this latter preparation should supersede the dimethyl, except for hypodermic administration, when this latter, the well-known cacodylate of soda, should be employed.

He finds aspirin (benzene methylic acetyl) less toxic than the salicylates and far more effective in rheumatic conditions; it produces analgesia without insensibility, causes an acceleration of respiration, is a very marked diuretic and produces little or no cardiac depression.

Autopsy after death from aspirin shows an intense congestion of the kidneys, suprarenal glands and lungs.

Hyperpyrexia.

Petit-Vendol (*Ibid.*) enumerates cases of extremely high temperature occurring spontaneously without any symptoms and without any acceleration of the pulse or respiration, which are on record.

In the *Journal La France*, the case of a young soldier is mentioned who had frequent accessions of temperature to 44°C. (111.2°F.) and even to 58°C. (136.4°F.), without suffering the slightest discomfort.

The case here reported is one of a woman who, during the course of a slight cold had a temperature running between 39 and 42°C. (102.2 to 107.6°F.), which lasted for several days, and caused no hindrance to the performance of her ordinary daily duties. In this case the pulse never went above 68 and was usually near 60.

Various hypotheses are suggested but none are borne out by the most careful examination of the patients. There seems to be a disturbance of the heat-regulating center, essential unto itself.

BOOK REVIEWS.

The Practical Medicine Series of Year Books, Comprising ten volumes on the year's progress in medicine and surgery, issued monthly. Under the general editorial charge of Gustavus P. Head, M.D., professor of laryngology and rhinology, Chicago Post-Graduate Medical School. The Year Book Publishers, 40 Dearborn street, Chicago. Price, for the Series, \$7.50.

Volume VII.—*Materia Medica and Therapeutics; Preventive Medicine; Climatology; Forensic Medicine.* Edited by George G. Butler, Ph.G., M.D.; Henry B. Favill, A.B., M.D.; Norman Budge, A.M., M.D.; Harold N. Moyer, M.D. June, 1902. Price, \$1.50.

Practitioners will find all the newer pharmaceutical preparations and the newer use of well-known drugs concisely described. The drugs and therapeutic agents are arranged alphabetically. The increasing prominence of preventive medicine necessitates its close study by all students. It is well known that climatology is poorly understood; its recent progress is nicely described by Dr. Budge.

The busy physician who can not take time to wade through all the journals will find much comfort in these little volumes.

A Text-Book of Practical Therapeutics: With especial reference to the application of remedial measures to disease and their employment upon a rational basis. By Hobart Emory Hare, M.D., professor of therapeutics and *materia medica* in the Jefferson Medical College, of Philadelphia. With special chapters by Drs. G. E. deSchweinitz, Edward Martin and Barton C. Hirst. New (9th) edition. In one octavo volume of 851 pages, with 105 engravings and 4 colored plates. Cloth, \$4; leather, \$5; half morocco, \$5.50, net. Lea Brothers & Co., Philadelphia and New York.

The value of this book is well known. Its sale has been very large; it is a book appreciated because it contains what its title conveys—practical therapeutics. Part one contains general therapeutic consideration; it is a brief exposition general therapy, classification and prescription writing. Part two contains the *materia medica* proper. This

is a clear exposition of all the valuable drugs. Part three deals with remedial measures other than drugs, and feeding the sick. This gives a brief, but very practical description of heat and cold, serum therapy, inhalations, bathing, etc., as applied at the bedside. Part four contains the treatment of diseases, arranged alphabetically. This is not a cyclopedia of all methods of treatment, but rather a clear, concise description of the best methods of treatment which, in the judgment of the author, deserves recognition. The profession generally admire one of his selective ability, but there is much also that has come from his own experience.

The book has been thoroughly revised and numerous new illustrations add to the clearness of the description. No doubt this book will increase in its merited popularity.

A Text-Book of Obstetrics. By Barton Cook Hirst, M.D., professor of obstetrics in the University of Pennsylvania. Second edition. With 563 illustrations. Cloth, \$5; sheep or half morocco, \$6, net. W. B. Saunders, Philadelphia.

The anatomy of the pelvis and female sexual organs is illustrated with many fine cuts and greatly adds to the clearness of the description. Embryology occupies considerable space and is a very satisfactory description. Very interesting is the exposition concerning the diseases of the placenta and fetus.

Especial attention is given to the important subject of diagnosis of pregnancy. The pathology of pregnancy is especially strong in its splendid treatment of abortion. Extrauterine pregnancy is given twenty-five pages and contains all the necessary facts.

Part second deals with the physiology and management of labor and of the puerperium. It contains numerous illustrations. We are in accord with his statement that he has no confidence in episiotomy. He prefers ether, but does not use it as a routine; the woman's suffering should serve as a guide. To resort to an agent to abolish suffering when it does not exist is absurd. He prefers to have the patient on her side during labor. The directions for preventing rupture of the perineum are sound.

We are impressed by the minute directions given in the care of the woman in the puerperal state; this is too often neglected. No clearer exposition of the mechanism of labor will be found anywhere, the fine illustrations adding very much to the value of the text.

The pathology of labor is given its full importance, and the whole subject is treated in a satisfactory manner. It is in this part particularly that the general practitioner will find much that will broaden his knowledge.

A modification of Krause's method is recommended for the induction of labor.

The new-born infant, its physiology and pathology, receives particular attention in the closing chapter.

Altogether a very satisfactory exposition of the practice of midwifery.

The Neuroses of the Genito-Urinary System in the Male,

With Sterility and Impotence. By Dr. R. Ultzmann, professor of genito-urinary diseases in the University of Vienna. Second edition, revised, with notes and a supplementary article on Nervous Impotence, by the translator, Gardner W. Allen, M.D., surgeon in the genito-urinary department of the Boston Dispensary; instructor in genito-urinary surgery in Tuft's Medical College. Illustrated. Pages 198. Extra cloth, \$1.00, net. F. A. Davis Company, Philadelphia.

This small volume, in neat binding and good type, will serve as a useful guide in the treatment of a class of cases which tries the patience as well as the skill and knowledge of the physician.

Professor Ultzmann's very large experience has enabled him to classify closely and to indicate proper procedures. He claims best results from local treatment and gives rather minute details in the management of electricity, sounds and various mechanical methods. His remarks on nocturnal enuresis seem to us particularly valuable.

Gardner Allen, in the supplementary article on nervous impotence, presents nothing new but has performed a useful service in bringing together in compact form the really valuable knowledge which we possess on this subject.

Text-Book of Materia Medica and Pharmacology. By George

Frank Butler, Ph.G., M.D., professor materia medica and clinical medicine in the College of Physicians and Surgeons, Medical Department of the University of Illinois. Third edition, thoroughly revised. W. B. Saunders, Philadelphia.

This is a *text book* and one calculated to fulfill the author's wish, *i.e.*, to facilitate an intelligent and comprehensive understanding of

materia medica and therapeutics. An invaluable feature for some is the giving of a careful Latin accent with the design of correcting an all too prevalent disregard of proper pronunciation. Several valuable tables, showing at a glance the untoward action of drugs on the general economy and the various organs are incorporated in the work.

The arrangement in general is good. Under Clinical Extracts much that is recent will be found concerning thyroid extract, suprarenal extract, nuclein, etc. Serum therapy is also dealt with as thoroughly as consistent with the scope of the book. The chapter on prescriptions is full of practical hints.

The general properties of drugs, physiological action and therapeutic application are dealt with as in other works of the kind, adapted rather to the student and for ready reference than to the searcher after the minutiae of detail in experimentation and observation.

The index is unusually good, being divided into a clinical index and a general index. The reference to a given drug as described in detail is given in bold-face type to distinguish it from the supplementary references ; this feature is a good one, not found in all text-books.

A Text-Book of Diseases of Women. By Charles B. Penrose, Ph G., M.D., professor of gynecology in the University of Pennsylvania ; surgeon to the Gynecean Hospital, Philadelphia Third edition, revised. W. B. Saunders, Philadelphia.

This well-written manual is intended merely for the student. In most instances only one plan of treatment is recommended for each disease. Only the most essential points in anatomy, physiology and pathology are given. No space is given to disputed points in theories or methods of treatment. The chapter on injuries to the perineum is excellently written, just enough to be clear.

The chapter on fibroid tumors of the uterus deals rather lightly with the non-surgical treatment, and dismisses treatment by galvanism with a few words, saying that electricity has caused many deaths and that it may produce peritoneal adhesions, rendering subsequent operation most difficult. This statement is at variance with the experience of gynecologists who have abundant experience with this agent in selected cases.

The chapter on gonorrhea is in keeping with our advanced knowledge of this disease and is worth the reading, even to the practitioner.

A Brief of Necroscopy and Its Medico-Legal Relation. Arranged by Gustav Schmitt, M.D., of Milwaukee. Funk & Wagnalls Company, New York and London. 1902.

This is a pocket edition, which contains in brief form all the essential facts connected with the study, diagnosis, technique and medico-legal aspect of a post-mortem examination. The practitioner who is called to do a necropsy will find this a good little book to have in his pocket.

Commercial Value of Human Life. — Marshal Leighton (*Medical Record*) declares that the pecuniary value of life is subject to the same economic laws as are applied to the more vulgar commodities. The value of life increases up to the age of 30 years, which is the culminating point of physical vigor, then follows a gradual decline to 55 years, when a sharp decline follows. In courts of law the measure of an individual productiveness, which is the measure of his value, receives the most careful scrutiny; therefore, the decision of the courts are trustworthy in determining an individual's value to his family.

Studies in the Twelfth Census. — Some interesting deductions from a study of the twelfth census report are made by Henderson (*Cleveland Medical Journal*, June, 1902). He found that the Northern States have a foreign population of 16 to 23 per cent, while the South has a percentage never exceeding 2.5. In the Northern and Western States the negro never attains 2 per cent of the whole population, while in the South the negroes constitute from 30 to 59 per cent of the whole number.

The proportion of children to adults is larger in the Southern States than in the Northern. He concludes that the fecundity of the Southern white population exceeds very considerably that of the general population of the Northern States; but the mortality is largest in these states. While the general mortality of the Southern cities is nearly 40 per cent larger than that of their competitors in the North. The mortality of the white population of the Southern cities is much less excessive, averaging only about 17 per cent above that of the Northern cities compared.

NOTES AND ITEMS.

Errata.—A typographical error occurred in the original article of Dr. Winter, July No., "Observations on Gunshot Wounds." On page 5, line 20, "the wound of exit is not apt to be large," should read "the wound of exit is apt to be quite large."

Epileptic Seizures.—Lalou and Mayer have produced typical epileptic seizures in dogs by injecting into their veins a strongly concentrated saline solution. At the moment of the aura the cryoscopic point of the blood was found very much lowered, with, however, no discernable change in the coefficient of its viscosity.

Precocious Menstruation.—Ansset reports a case of precocious menstruation. The child, aged 4 years and 9 months, had developed every sign of puberty, and menstruated regularly. It is interesting to note that even in the temperate climate of France, 41 cases of precocious maternity have been collected by Gautier. Of these 41 cases, 19 menstruated during the first year of life, 9 during the second, and the rest before the 6th year. The body development in these cases showed remarkable advances toward puberty. Three out of this series of 41 cases became pregnant between the 8th and 10th year; of these three, one normal delivery was effected, one aborted, and in the other an embryotomy was performed. The three mothers survived.

The "Flint Murmur." — According to Thayer (*American Journal of Medical Sciences*), in uncomplicated aortic insufficiency a rumbling, echoing, presystolic or mid-diastolic murmur heard only over the apex of the heart is heard in about one-half of all cases. The murmur very much resembles that of mitral obstruction, but is less intense. It is rarely associated with a tapping systolic impulse and a snapping first sound as in mitral obstruction, while the pulse is large and characteristic of uncomplicated aortic insufficiency. In the absence of these sounds and with a large pulse, the functional character of an apex presystolic murmur in aortic insufficiency is to be suspected, especially in cases where there is no history of an acute infectious disease.

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ORIGINAL CONTRIBUTIONS.

The Cecum: In Relation to the Psoas Muscle in 310 Adult Male and 125 Adult Female Autopsies.

Trauma of the Psoas Produces (Peritonitis) Pericecal
Peritoneal Adhesions.

By BYRON ROBINSON, B.S., M.D.,

CHICAGO, ILL.

THE description of the cecum, if traced three-quarters of a century, would appear to be a literary legacy from the manner in which one author copies another. Progressive knowledge of the anatomy, physiology and pathology of the cecum arose when new attributes and events were added to it. A new event and new attributes were associated with the cecum when Albers, of Bonn, gave to the profession the views of his four kinds of *typhlitis* in 1838, probably aided by the suggestions of Dance and Meinere in 1827. J. Burn, in 1838, called attention to the cecum by adding the term *typhlo-enteritis*. Golbeck appears to be the author of another cecal event by first employing the term *perityphlitis*. Oppalzer called in another event in the life of the cecum when he added the term *paratyphlitis*. In 1839, Grisolle called new attention

to the cecum by publishing views on phlegmonic tumors of the right iliac fossa. In 1827, the most remarkable of all attributes up to this time was published by Melier, who, after citing two observations of Louis Villermay, reports four cases of perforative appendicitis. This remarkable paper disclosed the office of the appendix and cecum, and was a great historic event for the cecum. The philosophic Huschke (1844), in writing the first scientific description of the cecum and appendix, with their folds and fossæ, added new attributes to the cecum.

In 1861, Luschka impressed the profession, as did Huschke earlier, and Bardeleben (1850), that the cecum is entirely invested by peritoneum and also that there is no (text-book) mesocecum.

In 1879, Biemer said that perityphlitis is always the consequence of perforation of the appendix, caused by stercoral concretion.

In 1886, R. Fitz wrote the modern epoch-making paper which discriminated for all time the office of the cecum and appendix.

Before the 90's, Willard Parker, Sands and McBurney, proved clinically and surgically that the cecum was not the etiologic factor in the right iliac fossa abscess.

In 1894, I showed the peritoneal adhesions about the cecum (and appendix) was due to the trauma of the psoas, inducing pathogenic microbes to migrate through the mucosa muscularis and into the peritoneum, producing plastic peritoneal adhesions.

Thus, step by step, with new events and attributes associated with the cecum it has become more definitely placed as to its physiology, anatomy and pathology.

The investigations of the present paper deals with another event in the history of the cecum, which is pericecal peritoneal adhesions due to trauma of the psoas and other muscles.

The caput cecum coli or intestinum cecum is that part of the colon (proximal or cranial end) which lies distal to the entering ilium. Its size varies from a half to three inches in length and from one to four inches in width. Its location is in the right iliac fossa, resting on the psoas and iliac muscles. It is the widest part of the colon. Normally, as a rule, the cecum is always entirely invested by peritoneum and there is no (text-book) mesocecum. In some few cases a segment of the pos-

terior surface of the cecum is not covered by peritoneum on account of abnormal development of the ileocecal appendicular apparatus and, consequently, the posterior surface of the cecum adjacent to the ileocolic valve is connected to the iliac fossa by connective tissue. This condition produces a partial (text-book) mesocecum.

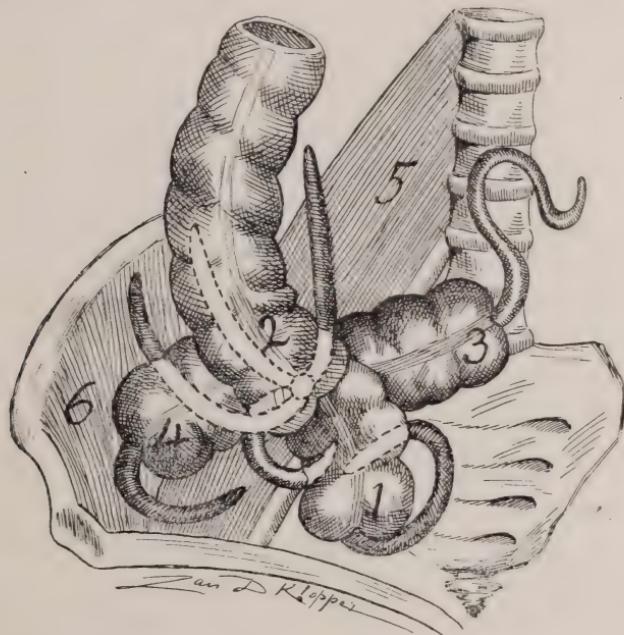


FIG. 1.—Author.—Illustrates the four major positions of the cecum. These major positions of the cecum in relation to the psoas are: 1, cecum in the pelvis; 2, cecum on the psoas; 3, cecum in the potential position; 4, cecum to the right of the psoas. No adhesions are drawn adjacent to any cecal position. The five major positions of the appendix is represented in relation to the psoas: 1, the pelvic position of the appendix; 2, the retrocecal position of the appendix; 3, the potential (enteronic) position of the appendix; 4, the appendix to the right of the psoas (chiefly); 5, the appendix lying on the psoas and common iliac. No adhesions are marked adjacent to the appendix in any of the five positions.

Anatomically and physiologically every organ must possess a neuro-vascular visceral pedicle (mesentery). Practically, the mesocecum is the mesenterico-colicum and the mesoappendix, for through these mesenteries the cecum is supplied with blood. The peritoneal folds which carry the blood to the

cecum I found distinct in the opossum, *i.e.*, the plica ileocecalis superior and the plica ileocecalis inferior (*i.e.*, the present mesoappendix). The original mesocecum is becoming displaced by blood-vessels projecting new peritoneal folds as early as the marsupials (opossum) and the substitute is the present mesoappendix.

The cecum, a less atrophic remains of some herbivorous digestive pouch than the appendix, is situated, as a rule, in the right iliac fossa, resting on the psoas and iliac muscles. In 310 adult males it was covered by the omentum in 15 per cent. This is a significant matter, because the omentum is the supreme peritoneal protector against the invasion of infection. If the omentum would cover the cecum there would be more circumscribed appendicular abscesses. The position of the cecum is important, as it may, through an elongated fixation apparatus, leave the regions which tolerate peritonitis (colonic or exudative) and assume the region which does not tolerate peritonitis (enteric or absorptive) deceiving both in diagnosis and operative intervention.

The ligamentum phrenico-colicum dextrum inserted into the right colon at the junction of its lower and middle thirds often retains the cecum in its usual locality, preventing its floating about or passing distally into the lesser pelvis. The cecum, prismatic in form, has three openings, viz., one opening into the right colon, one into the distal ileum (ileocecal valve, valve of Bauhin, of Fallopius, of Tulpian), and one opening into the appendix (ceco-appendicular valve, or Gerlach's valve).

THE MESOCECUM.

Mesocecum, { *a.* Mesenterico-colicum.
 b. Mesoappendix.

Every organ must have a neuro-vascular visceral pedicle, which may be primary or secondary. The present mesocecum is acquired and double. Originally, in the embryo, the cecum is a little projecting process of bowel situated at the junction of the ilium and the colon, whence it has a simple mesentery—the ligamentum enterico-cecum or ileocecal fold. This is the primitive mesocecum which becomes doubled in adults (man and higher mammals) and extends in an atrophic form from the distal enteron at a point opposite to the insertion of the mesenteron to the mesoappendix. The primitive ileoce-

cal fold (ligamentum enterico-cecum) which carried the blood-vessels and nerves to the cecum gradually becomes abandoned in the higher apes until in man it has practically lost its office as a neuro-vascular pedicle—a mesocecum, and has become a mere thin double fold of peritoneum carrying scarcely any visible blood-vessels. Hence the original mesocecum (ileocecal fold) atrophies and is replaced by two substitutes—the mesoappendix (left) and the mesenterico-colicum (right). The

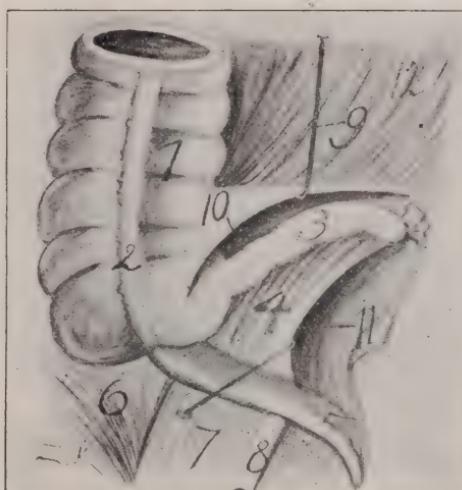


FIG. 2.—Author.—Shows the cecum and its peritoneal fossa and peritoneal folds. 1, cecum; 2, tenium coli; 3, ileum; 4, ileocecal fold (now inserted in its mesoappendix); 5, appendix; 6, iliac and 7, psoas muscle; 8, iliac artery; 9, mesenteron; 10, ligamentum ileocolicum, it forms the fossa ileocolic; 11, mesoappendix. 4 forms the fossa ileoappendicular. Both fossa are held patent by hooks.

old origin of the primitive mesocecum is not changed, but can in man be traced along the distal ileum at a line opposite to the insertion of the mesenteron. But in adult man the insertion of the primitive mesocecum has become displaced from the cecum and appendix and inserts itself generally into the right surface of the mesoappendix. The two substituted mesenteries for the primitive mesocecum have been produced by blood-vessels projecting other folds of peritoneum, which appear first in the erect-sitting apes, so far as my examination indicates.

The ileocolic artery divides and the anterior branch forms

the mesenterico-colicum (right) and the posterior branch forms the mesoappendix (left), these are the two new substituted mesenteries which displace the primitive mesocecum or ileocecal folds. Hence the mesenterico-colicum and mesoappendix constitutes the mesocecum because they succeeded the primitive mesocecum and also they carry the vascular and nerve supply to the cecum.

I shall discard the mesocecum of the anatomical textbooks which indicate that the cecum is held to the dorsal wall (ileo-psoas) by a fold of peritoneum, for that is a mere incident of irregular development—expansion of the cecum. By normal growth and development the cecum is entirely covered by peritoneum from the beginning, and when it is not, it is an incident of irregular development and, hence, an exception to the rule. By retaining primary or developmental mesenteries anatomy becomes simplified and capable of being remembered on general principle. Besides the three great pericecal folds, the mesenterico colicum, the atrophic enterico-cecal (ileocecal) and the mesoappendix, with their accompanying fossa, will be more readily understood. The right and left ligamentum intestini ceci are remnants of the ligamentum hepatocavo duodenale.

POSITION OF THE CECUM.

I have classified the cecum into four positions: Two with regard to the psoas as (*a*) on the psoas, (*b*) to the right of the psoas, (*c*) in the pelvis, and (*d*) the potential position of the cecum, whence, with an elongated fixation apparatus, it may be found in various positions of the abdomen, especially among the coils of the enteron. The position of the cecum is important because it may assume almost any position in the abdomen (potential), taking the appendix with it into dangerous absorptive peritoneal regions. Also its position is important, as it may lie within the traumatic range of action of the psoas or other muscles and become surrounded by peritoneal adhesions which comprises its circulation, blood and lymph, traumatizing its nerve periphery and limiting its assimilative and resisting power. Pericecal adhesions may also comprise the appendix in position, circulation and drainage, and fix it within damaging traumatic action of the psoas.

The Position of the Cecum as Regards Sex—310 Males and 125 Females.

1. The cecum lies in the lesser pelvis twice as often in women (20 per cent) as in man (10 per cent). This is explained by a spacious pelvis and a wide distal abdominal extremity.

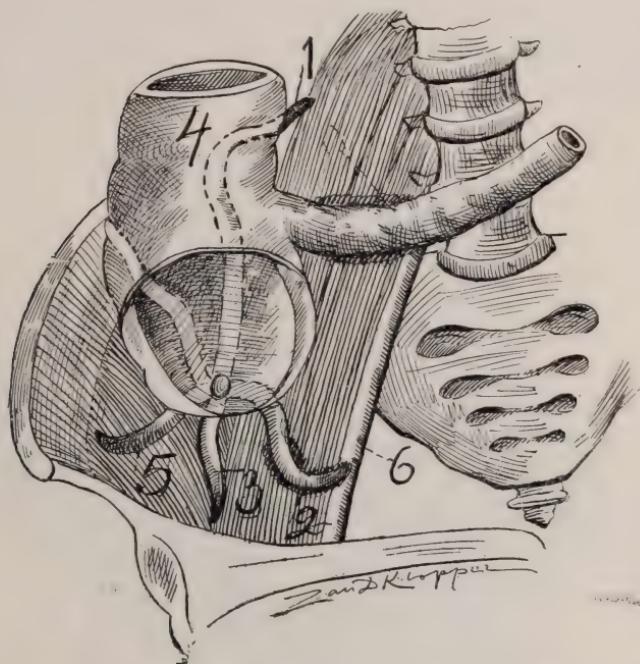


FIG 3.—Author.—Illustrates the relative position of the cecum and appendix to the psoas and iliac muscles; it also shows a general position of the cecum from the posterior surface of which arises the appendix. 1, retrocecal position of the appendix; 2, appendix resting on the psoas; 3, appendix resting at the junction of the ileopsoas; 4, right colon; 5, appendix resting on the iliac muscle and 6, common iliac artery. Observe that the ileum and appendix where they lie within range of the traumatic action of the psoas possesses adjacent peritoneal adhesions; also where the appendix tip, or free end, lies on the common iliac artery adjacent peritoneal. Adhesions exist, *i.e.*, if the appendix lies within the traumatic range of action of the artery (abdominal or common iliac), it may be surrounded by plastic peritoneal adhesions. This is a common position of the cecum. No pericecal peritoneal adhesions are marked on this cut.

2. The cecum lies 15 per cent more often on the psoas in

man (65 per cent) than in woman (50 per cent). These anatomic data explain the greater amount of pericecal adhesions in man from psoas trauma.

3. When the cecum rests on the psoas in man or woman the percentage of pericecal adhesions is practically the same.

4. The cecum lies to the right of the psoas 8 per cent more often in man (37 per cent) than in women (29 per cent). But in man the pericecal adhesions (57 per cent) are 24 per cent more often than the woman's pericecal adhesions (33 per cent).

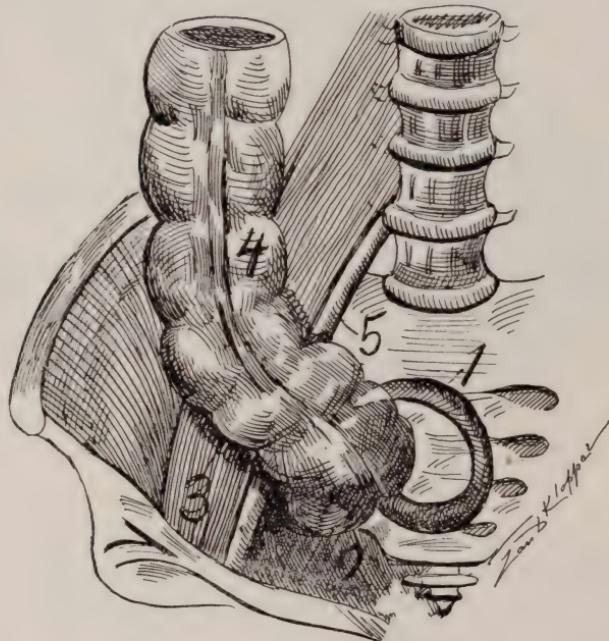


FIG. 4.—Author. Illustrates the pelvic position of the cecum, accompanied by the pelvic position of the appendix, and the relation of the cecum and appendix to the psoas. 1, appendix (no adhesions); 2, pelvic floor; 3, psoas; 4, right colon and 5, the common iliac artery. Notice that where the colon (any segment of the tractus intestinalis) crosses within traumatic range of muscular or arterial action, it possesses adjacent peritoneal adhesions. Peritoneal adhesions from muscular or arterial trauma appear first in the mesenteries and second in the bowel segments.

5. In the potential position of the cecum the percentage is practically the same, but for the potential position man (32 per cent adhesions) has 12 per cent more pericecal peritoneal adhesions than women (25 per cent adhesions).

6. The three significant positions of the cecum are: (*a*) on the psoas (man 65 per cent, woman 50 per cent), (*b*) the potential position (man 32 per cent, woman 31 per cent), (*c*) the pelvic position (man 10 per cent, woman 20 per cent).

7. The significance of the position of the cecum is owing to (*a*) its proximity to the psoas, where it may acquire pericecal peritoneal adhesions and compromise itself and the appendix in function and structure by disturbed mechanism. (*b*) The position of the cecum is liable to indicate and influence the

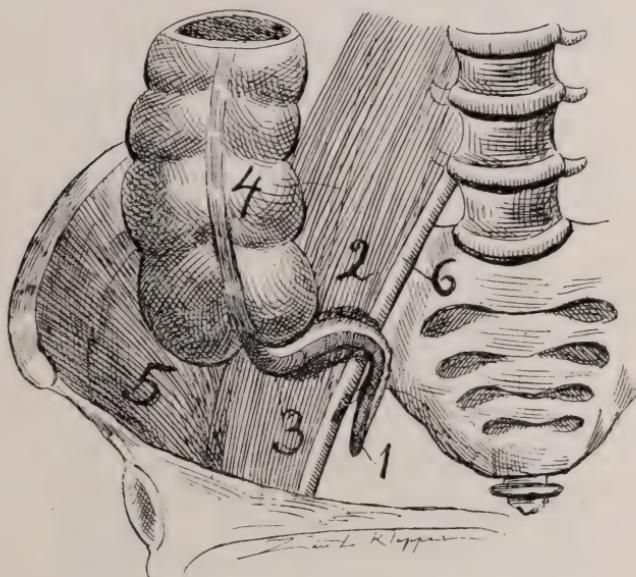


FIG. 5.—Author. — The cecum is not drawn with pericecal peritoneal adhesions due to muscular trauma. Illustrates the relative position of the appendix to the psoas and also extending into the lesser pelvis. 1, appendix extending into the lesser pelvis; 3, appendix resting on the psoas; 4, colon; 5, iliac muscle and 6, common iliac artery. Observe that where the appendix lies within range of traumatic action of the psoas muscle and iliac artery that it is surrounded by peritoneal adhesions, and that where the appendix extends into the lesser pelvis, free from any traumatic range of muscular or arterial action it is not surrounded by peritoneal adhesions; also observe that it is the vascular mesoappendix that first chiefly shows peritoneal adhesions, the less vascular mobile appendix presents adhesions the least. Muscular and arterial trauma produces periappendicular adhesions and appendicitis

position of the appendix—where the one is the other is liable to be. (c) Its proximity to the oviducal pavilion, as it may acquire adhesions from infection in the mucosa of the pavilion. Cecal contraction and dilatation may aid in spreading infection from the oviducal pavilion.

8. The position of the cecum as regards sex is not so significant as that of the appendix; for, the appendix is the weakest part, segment, of the tractus intestinalis. The appendix does not resist man's great enemy—trauma and infection. A glance at the tables of the percentage of the types of ceca in 310 males and 125 females, show scarcely any difference as regards sex.

THE CECUM IN 310 MALES,

Relating to the percentage of the cecal position in regard to the psoas, and the percentage of pericecal peritoneal adhesions in regard to position.

POSITION.

	In Pelvis.		On Psoas.		Right of Psoas.		Potential.	
	N ^o	Adhesions.	N ^o	Adhesions.	N ^o	Adhesions.	N ^o	Adhesions.
1st 100	4	4	73	50	24	13	28	12
2d 100	12	5	67	41	46	24	31	9
3d 100	16	4	55	39	43	27	37	16
I-3	32	13	195	130	113	64	97	37
Average, per cent.	10	40	65	66	37	57	32	37

THE CECUM IN 125 FEMALES,

Relating to the percentage of the cecal position in regard to the psoas, and the percentage of pericecal peritoneal adhesions in regard to position.

POSITION.

	In Pelvis.		On Psoas.		Right of Psoas,		Potential.	
	N ^o	Adhesions.	N ^o	Adhesions.	N ^o	Adhesions.	N ^o	Adhesions.
Average, per cent.	20	34	50	64	29	33	31	25

UNUSUAL CECA.

Unusual ceca may be referred to under three heads, viz.: (1) Excessively mobile, (2) excessively large, and (3) excessively small ceca.

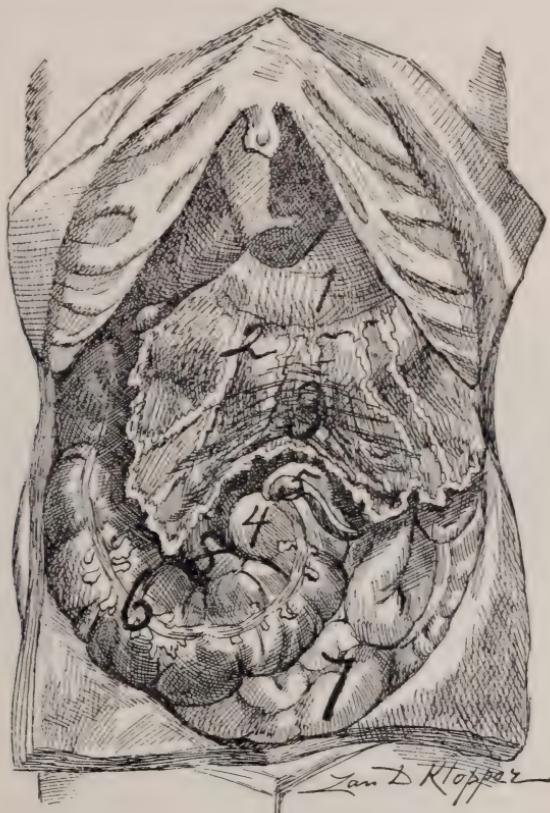


FIG. 6.—Author.—Illustrates a subject with the cecum (appendix) in the potential position, *i.e.*, among the coils of the enteron, the dangerous area of peritonitis. By contraction and dilatation of the cecum the omentum has been thrown off the appendix. Unless the omentum be on hand when the appendicular rupture occurs among the enteronic coils to corral the infection, death is almost always the result. 1, stomach; 2, omentum on transverse colon; 9, omentum colicum; 5, appendix; 4, cecum—both uncov ered by the omentum; 7, coils of enteron.

1. *The excessively large ceca* are rather common as they are the potential ceca (310 males, 33 per cent, and 125 females, 31 per cent). One can note them four inches wide and three inches wide, entirely surrounded by peritoneum. With excess-

sively large ceca frequently occur an elongated fixation apparatus (mesocolico-mesenteron) a partial mesenterium commune, and in such cases the right colon will be invested with peritoneum from one to four inches proximal to the entrance of the distal ilium. Hence when one notes a cecum three inches long, and added to this a right colon covered with peritoneum and practically free for four inches more, it appears as if these segments of the tractus intestinalis had developed excessively

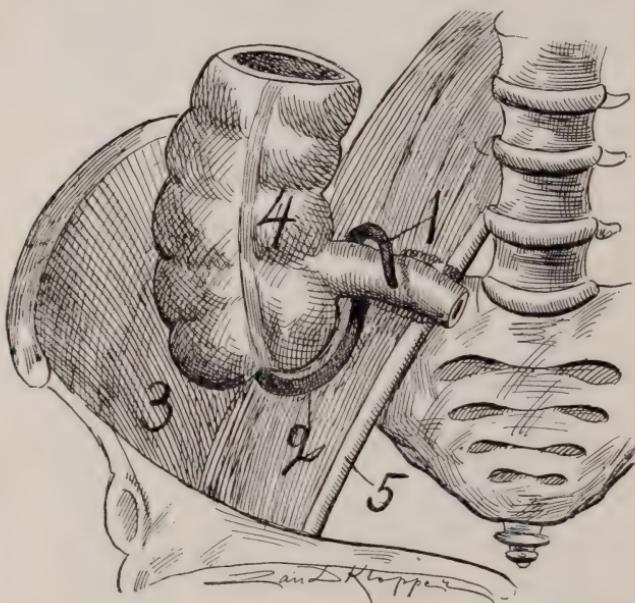


FIG. 7.—Author.—Illustrates the position of the cecum and appendix relative to the psoas (retrocecal position). 1, appendix passing proximalward (retrocecal) posterior to the distal ileum; 2, appendix lying in the right border of the psoas; 3, iliac muscle; 4, colon and 5, common iliac artery. The segment of the ileum which lies within traumatic range of muscular or arterial action is surrounded by peritoneal adhesions. When the cecum or appendix lies at the ileopsoas junction it is frequently free from adhesions as the range of muscular trauma is of a limited degree. In this cut no pericecal peritoneal adhesions are drawn.

and grown to remarkable proportions. Such enormous ceca, occupying the potential position, can be made to touch every abdominal viscous, may pass into any hernial ring and usually lie either in the pelvis or flat in the enteronic area, in the mid-

dle of the abdomen, the center of equilibrium or point of least resistance. The large, excessively mobile ceca have, with the right colon, partial mesenterium commune (mesocolico-mesenteron) and no doubt this non-developed, or primitive state, with incomplete rotation of the tractus intestinalis and descent of the cecum facilitates large blood supply to the cecum and right colon. The usual descent of the cecum appears to limit the cecal blood supply. Hence with excessively-developed ceca are associated an elongated mesocolico-mesenteron which facilitates a large cecal blood supply, an incomplete axial rotation of the tractus intestinalis, a partially free right colon and non-descent of the cecum.

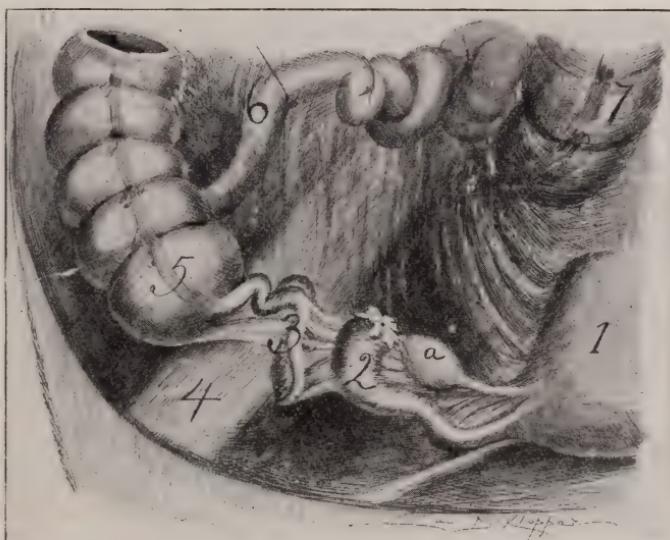


FIG. 8.—Author.—Illustrates the relation of the cecum and appendix to the psoas and the female genitals. It is difficult to determine whether appendicitis or pelvic peritonitis (from the oviduct) preceded in this case. However, probability it is the rule of life and, therefore, it is very likely that the inflammation first began in the genitals. 1, uterus; 2, ampulla of the oviduct; 3, appendix; 5, cecum; 6, ileum; 7, the sigmoid merging into the colon. Appendicitis occurs once in woman to three times in man.

2. Excessively mobile ceca are those with elongated fixation apparatus, (mesocolico-mesenteron). The excessively mobile cecum is generally large from a free blood supply through a mesenterium commune. In the mobile cecum the

line of reflection of the peritoneum from the posterior right colon to the posterior abdominal parieties varies considerably, is generally transverse, mostly confined to the psoas, and the reflection of the peritoneum occurs, as a rule, between the anterior superior iliac spine and the distal pole of the right kidney.

3. *Excessively small ceca* are fairly common. Such a condition is no doubt due to a limitation of cecal blood supply during axial rotation of the tractus intestinalis and cecal descent. The axis of rotation of the tractus intestinalis is the superior mesenteric artery, vein and nerve. If no axial rotation occurs and, consequently, a mesocolico-mesenteron persists, no limitation of blood supply will exist, but in axial rotation and slow cecal descent, with the cecum partially fixed during the whole journey, the blood supply becomes limited by contraction. The cecum may be found in adults one inch wide and about half an inch long. Such ceca have a poverty of blood supply. They are not significantly larger, at least in their contracted state, than the distal end of the ilium. Generally the very small cecum is fixed close to the psoas muscle, with practically no mobility, and surrounded by abundant pericecal peritoneal adhesions.

(*To be Continued*).

Two Contrasted Cases of Typhoid Fever.

By GEORGE HOMAN, M.D.,

ST. LOUIS, MO.

DURING the latter part of last fall the writer treated two patients having typhoid fever the resemblances of whom in some points, and the divergences in others, may justify a brief recital.

The patients were two lads each the only child of his respective parents, both were nearly 14 years of age, and lived neighbors in a healthful part of the city. They were also schoolmates, and indeed, pupils in the same room of the Field School.

As patients both were seen by Dr. Fischel in consultation, and were alike in having received practically identical medical treatment, and also in having been under the charge of the same professional nurse when the strength of their respective mothers proved inadequate to the task of properly caring for them in the more serious stages of their illness.

F. K. was first seen by me on this account on Friday, October 25, 1901, he having been detained from school for several days because of malaise, and I was called to see H. D. two days later—both presenting febrile conditions, but not sufficiently definite to be in any way characteristic, the development, however, being much more pronounced in the case of F. K., who was an unusually well-grown and well-formed boy with rosy cheeks, a hearty appetite and vigorous digestion.

The symptoms developed rapidly in this case, the fever ranging high, with stupor, delirium, meteorism and the most profuse roseola typhosa I have ever seen appeared about the twelfth day. The ensemble, indeed, was to the parents so threatening that they became panicky in fear of the outcome, and accordingly Dr. Fischel saw the patient with me on November 1st, who confirmed the tentative diagnosis of typhoid fever, a blood test made the next day, and being about the tenth day of the fever, showing the Widal reaction, although earlier in the week a similar test had proved negative.

Notwithstanding the severity of the onset of the disease in this case and the anxiety caused in its earlier course, no complication whatever developed and the patient was discharged practically well on the thirtieth day of treatment.

H. D., the other patient, presented a great physical contrast to his schoolfellow, being of spare frail figure, poorly nourished with pale complexion, uncertain appetite and weak digestion. He was mentally bright, fond of books and suffered at times with headache and abdominal pains.

As mentioned, I saw him first in this illness on October 27th, the symptoms not being well defined, nor was there any rapid morbid development as in the other case. The temperature record had no particular characteristic not ranging very high, and the Widal reaction was not obtained until after the end of the second week, and was followed by an extremely sparse eruption seen with difficulty and only on the abdomen.

The atypical initial fever was ascribed to an attack of

grip—others in the family having had recent experience with that ailment, which masked the case, this being the opinion expressed by Dr. Fischel who first saw the patient on November 25th, the obtrusion of that disease preventing earlier recognition of the typhoid factor.

The case seemed to progress fairly well for a week longer, some cough being present; the pulse maintained a rather high rate, and assimilation was imperfect, although liquid food in sufficient amount was taken, and instead of any stupor or delirium being present a rather morbid vigilance, but of a cheerful sort, marked the entire course of the disease. There were no abdominal symptoms that could be developed by palpation in the earlier weeks, but on November 24th, or the twenty-eighth day of treatment, the patient complained of pains in the bowels, and these persisted with tenseness of the abdominal walls and other indicia of peritoneal misadventure. In the forenoon of the next day the patient vomited some dark matter which was recognized as blood by Dr. Fischel and myself when we met in consultation shortly afterward.

The urgency of the case now was such that we united in recommending to the parents an operation as the only recourse holding out any promise of relief. This was assented to and the patient was removed to the Missouri Baptist Sanitarium where Dr. Francis Reder performed abdominal section at 2:30 p. m. the same day. It was found, however, that the peritoneal surfaces were so firmly adherent as a result of inflammation that their separation was impossible without resort to unwarrentable violence, and after ascertaining the integrity of the cecum and appendix in so far as perforation and leakage was concerned the operation was of necessity relinquished.

Despite a naturally frail physique and the added tax of febrile illness, the patient took chloroform admirably and regained consciousness after the operation without exhibiting, then or afterward, a trace of shock that could be attributed to a surgical cause. The black vomit reappeared, however, and continued until the fatal denouement at 5:40 the next morning, loss of blood being the determining factor in the event, which occurred on the thirtieth day of treatment.

The attendant circumstances unhappily were such that consent to hold an autopsy to discover precisely the intra-abdominal conditions could not be obtained, and this much needed light on the etiology of the case was not available,

therefore only the seeming probabilities can be advanced.

It would appear from what was disclosed by the incomplete operation that if perforation of the bowel and leakage of the contents was the cause of the general peritonitis the lesion must have occurred high up, and the continuous free vomiting of blood would bear out this view.

Very little medicine was given in either case, the principal being an occasional sedative to induce sleep in the case of H. D. The cool bath, pack and sponging were relied on to reduce temperature when above 102° F. A bath towel wrung out of cool or even hot water when complaint of chill was made, was most frequently used spread over the body and a fan then employed to hasten evaporation.

The diet was milk, buttermilk, occasional broths and very frequently the whites of eggs with orange juice and sugar shaken together with ice.

Enemas were used as needed.

From my previous knowledge of the lad H. D. I am disposed to think that his habit of poor nutrition and imperfect assimilation was due to a condition of mesenteric tuberculosis acquired probably after his second year, as in babyhood he was very plump, and this was a serious handicap in his struggle against an acute wasting disease.

Infective Cellulitis.

By CHARLES G. GEIGER, M.D.,

ST. JOSEPH, MO.,

PROFESSOR OF GENITO-URINARY DISEASES AND SURGERY, ENSWORTH
MEDICAL COLLEGE.

THE subject of infective cellulitis on account of the intensity of the symptoms and the large areas involved is both of great pathologic and therapeutic importance. I wish to report three cases that have come under my observation within the last year. It is seldom that a physician has the opportunity to report his own case. With your permission I will state a case in which I was the patient.

I was taken ill April 2, 1901, with a violent tonsillitis and pharyngitis which continued for forty-eight hours, at which time a rhinitis developed, and I had several profuse hemorrhages from the nose, losing as much as a pint of blood at a time. My physician recognized extension of the disease through the lachrymal ducts, and twenty-four hours after a slightly swollen condition of the skin was noticed on the inner canthi of both eyes at the orifices of the lachrymal ducts, which rapidly traveled over the face and head, and extended over the surface of the body down as far as the waist. On the fifth day I became delirious and continued so for ten days. Temperature ranged from 103 to 105.6° F. About the twelfth day it was thought that I could not live, as I went into collapse, but thanks to the persistent efforts on the part of my physicians and nurses, the patient still lives.

During the time of great depression, which lasted ten days, I could not take food because of gastric irritation, but was given freely of brandy and strychnin. Locally, ichthysol, from 5 to 15 per cent, with glycerin, was used.

Your attention is directed to this case on account of the high temperature, extent of surface involved and the seat of the onset.

CASE 2.—W. B., aged 32 years, who had been working in a packing house, was taken ill about the first of last June. I was called in consultation about the 9th or 10th of the same month and found the patient suffering from a violent, diffuse inflammation of the cellular structure of the entire dorsal and lumbar regions, extending to the axillary line on either side, with three or four foci of suppuration over the surface of the parts affected. We had the patient removed to the Ensworth Hospital, where we laid open the suppurating parts and found that the entire connective tissues were in a gangrenous condition, and later was removed in great sloughs. His temperature ranged from 102 to 105° F.

During the first week in the hospital he had all the symptoms of septicemia. We irrigated the diseased parts freely with normal salt solution once a day, and applied gauze wrung out in a 2 per cent hot carbolic acid solution, covered with oil silk. The patient was given strychnin and quinin, with the free use of milk punch, eggnog and whisky slings to stimulate and nourish him. The patient recovered.

CASE 3.—Mr. A. H., aged 34 years, retail butcher, while

trying to catch a street car, struck his leg, knocking off a bit of the skin at the junction of the middle of the middle third of the right leg over the crest of the tibia.

He consulted a physician who dressed the wound, but infection followed and I was called about the sixth or seventh day. I found the small wound highly inflamed, with red lines outlining the lymphatic vessels of the leg and thigh, these lines extended to the groin, and the inguinal glands were swollen and very tender to the touch. The patient had a temperature of 105° F., with profuse sweating and with other symptoms of blood poisoning. I at once ordered cathartics and supportives, and gauze wrung out in a 2 per cent hot carbolic acid solution to be applied locally and covered with impermeable material; this was continued for three or four days, the patient having now developed two or three foci of suppuration over the parts affected.

I then ordered the patient removed to the Emsworth Hospital. The affected parts were freely incised, after which normal salt irrigations were used. Large sloughs of skin and cellular structure took place. Quinin and strychnin were ordered in large doses, with brandy, eggnog, milk punch and whisky slings were also freely administered during the depressed stage. The patient recovered.

Regarding the cause of suppuration in the tissues we are still considerably in the dark. The streptococcus pyogenes causes in man inflammation which, for the most part, but not always, assume a purulent character. Occasionally they are found in the sound mucous membrane; for example, in the upper air passages or in the vagina and cervix uteri, and from this fact it is supposed that either its virulence is slight or the mucous membranes offer successful resistance.

When the streptococcus spreads in the corium it utilizes the lymph spaces and the lymph vessels as pathways and breeding places and causes a more or less severe inflammation which may be recognized macroscopically by an advancing reddening and swelling of the skin, which is known as erysipelas.

The spread and multiplication of cocci in the subcutaneous tissues give rise to a spreading sero-purulent and fibrin-purulent inflammation, often with subsequent suppuration of the tissues; these forms of infection are designated as phlegmons.

The danger of a streptococcic infection depends upon the severe progressive local disease and upon the intoxication by means of toxins, which find expression in the fever and severe systemic symptoms. The streptococcus pyogenes is the most common cause of suppuration. The bacillus coli communis is capable of causing degeneration and inflammation in various tissues.

The bacteria of erysipelas may not only bring about erysipelas of the skin, but are able also to produce suppuration or inflammation of the lungs. According to recent developments, bacteria are not the only agencies which call for clean surgery. There are other things of greater significance in prognosis than these living organisms.

Bacteria can be neither the sole nor the final cause of disease. We know that various species of germs exist beneath the epidermal surface; yet, with everything favorable for infection—bacteria *in situ*, trauma, temperature of 37°C, blood and serum, and the presence of oxygen absolutely nothing may occur. From our knowledge of bacteria such inaction in the presence of every favorable agency is highly paradoxical. On the other hand, after most rigid asepsis and antisepsis, we do get infection and we are absolutely in the dark as to the source of the infecting agency.

Now, it is a fact that the same pyogenic cocci are found over and over in the most various suppurative processes—phlegmon, boil, carbuncle, bubo, peritonsillitis, etc. It is usually claimed that these clinical variations of disease depend upon different degrees of virulence of the microbes, yet that simple explanation will hardly suffice to account for the great diversity of clinical manifestations. Some of the individual affections being rare and others of every-day occurrence. On the other hand, we have clinically acute progressive gangrene, lymphangitis of several types, abscesses, phlegmon, erysipelas, furuncle, carbuncle, acute fat necrosis, pyothrombosis, purulent edema, pure diffuse inflammatory edema, lymph thrombosis and bubo, and opposed to all these varieties of wound infection, what do we find bacteriologically? Just the same staphylococci and streptococci and bacillus coli over and over again, in no apparent relationship with the variety and severity of the infection.

What are we to think when we see a surgeon infected professionally, develop diffuse lymphangitis on one finger and a

true furuncle with fat necrosis on the other? In each lesion was found both the staphylo- and streptococcus, lessened resistance of the tissues, number and virulence of bacteria are insufficient to account for these great clinical variations. When we come to the picture of general infection, we are still in a domain of paradox, not only the vulgar staphylo- and streptococcus, but nearly every sort of infectious germ appears to be able to cause pyemia, septicemia, embolism, etc.

It is not my purpose to discredit bacteria as pathogenic agencies, but simply to insist that we must invoke other and unknown factors before we can throw much light on the nature of the wound infection. Especially will it be necessary to explain what is meant by the term, weakened resistance.

The danger comes from two sources, namely, from septic intoxication and local phlegmon or gangrenous destruction. Each is, therefore, to be combatted so far as possible. We all know that there is no specific internal treatment for this disease. Years ago tincture chlorid of iron was long valued as such, but if it has any good qualities at all, it only acts as a supportive, and can not be given in all cases on account of deranged conditions of the stomach. Our results depend a great deal in keeping the excretory organs in good condition. If the patient is much prostrated, tonics and stimulation is of the greatest importance. If, along with prostration, there occurs restlessness and delirium, then anodynes and hypnotics are more serviceable and should be administered to meet the indications. The administration of bichlorid of mercury, salol or something else of this character has been recommended, which is supposed to act as a germicide, but I doubt their virtue in this regard. Strict attention must be paid to the nourishment of the patient, only giving the patient food that is easily digested and assimilated. In mild cases simple soothing lotions, such as opium and lead, will suffice locally, but in the more severe cases, we find that the application of resorcin or naphthalene, ichthyol, mercury, creolin and carbolic acid in ointment or lotion act most admirably. I have found in some cases that mild antiseptics, as boracic acid, do good work. Should abscesses form, they should at once be freely opened and irrigated thoroughly with normal salt, or some may prefer a mild antiseptic, as lysol and creolin, 2 per cent solution, which is very good. When we have suppuration there is nothing that will give the good results locally as will hot carbol-

ized applications covered with oil silk or some impermeable material to retain the heat and moisture.

[609½ FRANCIS ST.]

The Vessel Phenomena in Aortic Regurgitation and Aneurysm.

By ELSWORTH SMITH, JR.,
ST. LOUIS, MO.

I WISH to present some cases to exemplify the position I take in the matter of vessel phenomena (which term embraces the marked general arterial pulsation, the Corrigan pulse and the systolic thud) in aortic regurgitation and thoracic aneurysm.

It is stated in some text-books that the vessel phenomena are pathognomonic of either aortic regurgitation or thoracic aneurysm.

I differ from this statement in that I believe the vessel phenomena pathognomonic of aortic regurgitation alone. When we find the vessel phenomena with thoracic aneurysm we may be certain that we have to do with aortic regurgitation along with the thoracic aneurysm and to the former lesion the vessel phenomena are to be ascribed.

This question is of value not only from the standpoint of diagnosis but also from that of prognosis, for the life expectancy of a case of aortic regurgitation is, of course, far greater, as a rule, than that of thoracic aneurysm.

I believe that the physical conditions requisite for the production of the vessel phenomena could never obtain in thoracic aneurysm unless there be present a coexisting aortic regurgitation. For in the latter disease at every systole of the heart the left ventricle throws an abnormal amount of blood into the aorta (its normal amount plus what leaked back during previous diastole), causing thereby, a sudden increase in tension, but followed immediately by an abnormally sudden and great fall in the tension, due to the backward flow of

the blood through the leaky aortic opening into a dilating and comparatively empty left ventricular cavity. And this abnormally high tension in the arterial system followed by this abnormally great fall in tension thus produced, are the causative factors in the production of the vessel phenomena.

The above physical conditions being peculiar to this particular lesion of the vascular apparatus and the resulting vessel phenomena being found clinically only when this particular lesion is present, therefore this physical sign becomes pathognomonic of the disease—aortic regurgitation.

In thoracic aneurysm there are present no such physical conditions. No ventricle is throwing an abnormal amount of blood into the aorta, there is no leakage of the backward-flowing current into a comparatively empty cavity, with a tendency to a vacuum. On the contrary, an aneurysmal sac would have a tendency to rather lessen the difference of tension between systole and diastole and, therefore, furnish a condition of affairs in the arterial tree rather the opposite of that obtained in the vessel phenomena of aortic regurgitation.

This is the special condition to which I wish to call attention and I here present several patients to illustrate my position.

The first patient represents a typical case of aortic regurgitation. The pulse shows the tremendous and sudden jump in systole with the collapse in diastole, as also the systolic thud distinctly, together with the marked general arterial pulsation. There is not, however, the least evidence of aneurysm in the case.

The second patient has typical symptoms and physical signs of thoracic aneurysm; but there is no sign of a murmur of any description and, therefore, no aortic leakage and as a result not the least evidence of the presence of vessel phenomena, and, yet, the patient is afflicted with a well-marked thoracic aneurysm. There might be a question as to the certainty of aneurysm where the bruit was absent. To this I would say that I believe the bruit of less importance in the diagnosis of aneurysm than is supposed. A far more valuable sign is that of DaCosta's two hearts in the chest, each with its own distinct beats, its own distinct sounds. When we hear the heart sounds thus repeated over a pulsating tumor in the chest we may feel almost as certain of the existence of an aneurysm as if we held the tumor in our hand. The case, there-

fore is a typical one of thoracic aneurysm, and, yet, without the slightest evidence of vessel phenomena. The pulse, far from being jumpy in character, is rather small and weak, and there is neither systolic thud nor general arterial pulsation.

In conclusion, I wish to state that I differ with those who think little of the value of the vessel phenomena from a diagnostic standpoint. It is probably true that in some cases a diagnosis may be made without the aid of the vessel phenomena, but I have seen many cases where this physical sign was of immense assistance.

In the diagnosis of aortic regurgitation I, in fact, rely more upon the vessel phenomena than on any other one sign. Where this sign is present I believe it points to aortic regurgitation, with or without aneurysm, but where it is absent, aortic regurgitation practically can never be present.

In the case presented of aortic regurgitation I am not at all satisfied that the pulses, as some one has suggested, are in any way unequal; there might be a slight difference. At any rate there is no evidence of a tumor, no definite pressure symptoms, no dulness—nothing, in fact, but a certain amount of dilatation of the aorta, which is found, more or less, in all such cases. But granting that there was a slight difference in the pulses and even going still further and admitting that the case presented as typical of aortic regurgitation, might possibly prove to be one, also, of aneurysm, even such an assumption would not in the least invalidate the position taken, viz., that the vessel phenomena, including general arterial pulsation, Corrigan pulse, systolic thud, etc., are pathognomonic of aortic regurgitation alone and can never be produced by a thoracic aneurysm; for the vessel phenomena in the case would then be still attributable to the aortic leak and not to the aneurysmal tumor.

The case in question was selected simply to contrast with one showing typically all the symptoms and physical signs of a thoracic aneurysm, and, yet, a total absence of all vessel phenomena, and because some few flaws were thought to be established in the diagnosis of the case thus selected, that did not in the least disturb the claim as heretofore stated, viz., that the vessel phenomena can not be produced by thoracic aneurysm.

It being totally unnecessary to prove that the aforesaid vessel phenomena are constantly associated with physical signs

of aortic regurgitation, the question then raised is whether the case selected was one of aortic insufficiency or not, was rather out of order in the discussion, as having no bearing at all on the point at issue.

In my private judgment though, the diagnosis of aortic insufficiency made in the case remains entirely correct in spite of inferences to the contrary.

[116 N. GRAND AV.]

The Protective Proteids in Vaccination.

By A. S. BLEYER, M.D.,

ST. LOUIS, MO.

THE rôle of the protective proteids in vaccination, their defense against the introduction of a vaccine lymph into the blood by means of an abrasion of the skin has, perhaps, been known, or at least suspected since the finding of such bodies in the blood and since vaccination has given rise to so varied and profound investigation. But I have found little or nothing in the recent literature bearing on this subject. I refer here entirely to the influence of the alexins of the blood on the vaccine virus, and in no way upon such other products of bacteria or living bacteria themselves as exist in most of the lymph used.

That such a barrier exists can not be disproven on any grounds that I can think of. Ehrlich, Bordet and many others have supported the views of Buchner and Metschinkoff, and it is the accepted opinion among these men that there exists a substance in the blood of a highly bacterical quality, independent of that secreted or given up by the polymorphonuclear leukocytes, and that further, this substance can act independently of phagocytosis, and does not require the death of leukocytes for its formation, and that this substance is present and active in a wound for a variable period of time before phagocytosis has begun.

[I will draw your attention at the end of this paper to a few test that bear on this point.]

The presence of this substance is undoubtedly as iniquitous to the absorption of vaccine virous, as it is known to be iniquitous to any micro-organism or its own toxin.

For the purpose of overcoming this obstacle it occurred to Dr. Saunders that by preventing the flow of blood such alexins would not be able to come into play, and for that reason it would be reasonable to expect a more successful "take." He suggested the use of a solution of adrenalin chlorid— $1\text{-}1000$, that should be instantly applied after scarification.

A test was then determined upon, and vaccination was done upon 40 children at the Episcopal Orphans' Home, each child receiving four very small abrasions, that were more on the order of incision than scarification, and on two of these four the hemostatic solution was instantly applied, and on two it was not. After waiting a few minutes for a slight constriction of the capillaries the glycerinized lymph was applied as equally as possible to the two inner of the four abrasions.

The appended table states concisely the relatively better success of "takes" on those abrasions in which the styptic was used.

Out of the 40 vaccinations, 14 were primary vaccinations, and 26 secondary. There were 17 successful "takes;" 5 of these were on the adrenalin-swabbed abrasions only. In one child the "take" was limited to an abrasion where no solution had been used. Seven took on both, but decidedly better on the adrenalin-swabbed areas. Two, better on the undisturbed areas, and 2 took equally on each. On 4 of the ones that did not take, there was a suspicious-looking redness with infiltration and a fair sized crust.

It will be seen, then, that in 70 per cent of the "takes" the adrenalin solution had a favorable influence.

I will state, in conclusion, that in reading over some observations made by Dr. A. E. Wright, that appeared in the *Lancet*, of December, 1900, on the bactericidal power of fresh blood, I noticed the statement that antityphoid blood—blood containing the specific immunizing bodies, the acquired "substance sensibilisatrice" of Bordet, to fresh blood that it rendered the germicidal power of the latter almost *nil*. We can draw from this the inference that the bactericidal power of the blood of a patient having recently had typhoid fever would be

very low, and that our vaccinations in such cases should be followed by a vigorous "take."

This report is only preliminary, and I hope to be able to obtain more extended statistics, which I will report at some future meeting.

In this work I have been an assistant to Dr. Zahorsky and have written this report at his request.

TABLE.

Take inner side only.....	5
Take outer side only.....	1
Take equally.....	2
Take inner side more.....	7
Take outer side more.....	2
No take but inner side more disturbed.....	4
No take but outer side more disturbed.....	0
No take equally.....	18

NOTE.—Inner side is where adrenalin solution was applied.

TESTS REFERRED TO IN THE TEXT.

Pfeiffer found that cholera spirillæ were destroyed in the peritoneum of guinea-pigs before the appearance of the polymorphonuclear cells.

Afanassieff found that anthrax bacilli placed on healthy granulation tissue were destroyed before phagocytosis could occur.

Kanthack and Hardy found that anthrax bacilli were killed by the serum of ordinary bullæ produced by vesication.

[4451 WASHINGTON BOULEVARD.]

The Bacillus of Ducrey.—Cultures of this microbe from soft chancers show an organism polymorphous in shape, but fairly constant in its chemical affinity for the staining reagents. A mixture of Ziehl's fuchsin, gtts. 10, and saturated solution of methylen blue, gtts. 7, in water 220, will usually bring it to view. Leuglet finds pure cultures of this bacillus in the pus from many cases of soft chancers and believes its primitive form to be that of a coccobacillus rather than a streptobacillus, but he recognizes this latter form as a possible change of the same bacillus, this change he believes is caused by a sort of hyalin or glairy envelope which holds the bacilli end to end and is developed at the expense of the culture medium in which the germs are grown.

LEADING ARTICLES.

THE ETIOLOGY OF WEIL'S DISEASE.

By PHILIP NEWCOMB, M.D., St. Louis.

The causative factor of epidemic catarrhal jaundice although a matter of considerable study and investigation has yet remained a matter of some uncertainty.

By some observers this process has been raised to the dignity of a distinct pathological entity, although regarded by Weil¹ himself as but a modified typhoid process. Furthermore, P. V. Baumgarten² and Chantemesse³ attribute all cases of jaundice from the mildest form to acute yellow atrophy of the liver to the presence in the portal system of the typhoid bacillus. The idea of a typhoid influence has become established in cholangitis, cholecystitis and in many cases of cholelithiasis, but whether the same cause may be ascribed to a disease which clinically appears separate and distinct is a matter as yet somewhat lacking in proof.

Dalgliesh⁴ reports a recent epidemic of jaundice in Blomfontein which was concomitant with the epidemic of acute dysentery and enteric fever, rising to its height and falling with that of the two last-named diseases, and the three being found at one time in separate individuals of the same family.

Bacteriologic proof of the connection was not obtained however.

A similar epidemic was observed in September, 1898, at Lexington, Ky.,⁵ in a military camp; 20 per cent of the troops had already developed typhoid fever during the early summer months and new cases continued to appear with many cases of mild catarrhal jaundice. The Widal reaction was not made, and the truth of the typhoid theory of the infection is again lacking in confirmation.

Another outbreak of jaundice occurred recently in Derbyshire,⁶ having no apparent connection with typhoid fever, but definite denial by absence of the typhoid bacillus not having been made.

Pratt⁷ has determined that the gall-bladder in typhoid fever usu-

ally contains the typhoid bacillus, but the complication of jaundice is, however, relatively rare and it would seem that the cause of cholecystitis must in part, at least, be sought elsewhere.

Aside from the bacillus of Friedlander there has been ascribed as the cause of Weil's disease the bacillus proteus fluorescens.

Jagur⁷ has from the urine of four cases of clinically unmistakable Weil's disease grown the latter micro-organism in pure culture.

Conradi and Vogt⁸ were unable to obtain cultures of any bacterium whatever from the blood of a similar case, but in the urine was found the bacillus proteus fluorescens, and in the feces this organism in abundance, together with the bacillus coli communis. Agglutination reaction in the blood was absent at all times. Their further investigations, post-mortem, demonstrated the bacillus proteus fluorescens in the kidneys, liver and spleen.

Although the question may yet be in doubt there is certainly a new factor in the causation of epidemic catarrhal jaundice supported by bacteriologic proof rather than clinical deduction and the possible coincidence of two separate and distinct morbid processes must be considered.

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⁶ibid.

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THE ETIOLOGY OF BRONCHIAL ASTHMA.

The causation of asthma is still involved in considerable obscurity; even the pathology is enwrapped in some contradictory phases. The theory of Williams that the difficulty of respiration is caused by a spasm of the bronchial muscles has received little confirmation in late years, and the explanation is considered inadequate in the vast majority of cases. Much more attention has been given to the theory of Curschmann, that it is an inflammation of the bronchioles—bronchiolitis exudativa. Sir Andrew Clark called special attention to its rela-

tion to hay fever, and declared that the paroxysms depended on a more or less diffused hyperemic swelling of the bronchial mucous membrane.

Many authorities find a neuropathic disposition in all cases. It is presumed that a local hyperesthesia exists, which under the stimulus of local or reflex irritation results in a vascular erethism.

A close study of the clinical varieties will reveal at least two kinds which, though resembling each other in the clinical phenomena, have certain differences which probably place them on a different etiological basis. The one variety is purely spasmodic, that is, occurs in short paroxysms in frequent irregular intervals. The paroxysms may last from a few minutes to several hours and recur almost daily. In the interval the patient is comparatively comfortable.

In another variety the disease lasts for several days without much amelioration. The cough is very persistent and with each coughing spell severe dyspnea arises. At certain periods of the day the breathing is much easier than at other times. The cough is aggravated at night and the paroxysms of dyspnea become exceedingly painful. The physical signs are those of a bronchiolitis.

It will be observed that most of these cases run a more or less definite course, the affection lasting from three to seven days. On further inquiry it will be ascertained that others in the family also have "colds." From these facts comes the inference that the inflammation of the bronchioles depends on some pathogenic micro-organism. It is this fact particularly which we wish to emphasize, that many affections diagnosed clinically as bronchial asthma, really is an infectious bronchiolitis, and depends on the common micro-organisms which cause disease of the respiratory passages; namely, the influenza bacillus, the pneumococcus and Friedlander's bacillus.

It is evident that little can be expected from antispasmodics in these cases. The cure depends on the same processes as eradicates any infection, that is, the evolution of specific antibodies, and during this time we must depend on means to alleviate suffering.

The internal administration of antiseptics—creosote, guaiacol, salicylates, benzoates, etc., seems to act beneficially in some cases, but the principal element in the cure is the activity of the body.

NEUROSTHENIC TONIC TREATMENT.

Under this term Rousseau attempted to establish a therapy which could be directed toward the strengthening of what he called the vital resistance. He gave Dumas credit for ascribing to the organism a force of vital resistance distinct from the force of assimilation. Rousseau, therefore, made a distinction between neurosthenic tonic treatment and analeptic tonic treatment.

He was not sure that a special force, known as vital resistance, actually existed; in fact, he admitted that it may be entirely an abstraction, but he convincingly demonstrated that there is a property or function of the body, apart from its apparent nutritive state, which resists the harmful influences that induce disease.

Although the theory is amplified to a magnitude commensurate with the speculative moods of the time, and becomes even fanciful, these earlier writers appreciated that individual resistance to morbid processes varies outside of the state of the nutrition. It was a dim perception of the facts and theories which have lately been developed from the doctrine of immunity.

While our ideas of this subject have become very clear and definite, we are still waiting to hear of effective medicinal agents which will increase the vital resistance. The few antitoxic and bactericidal sera which have been found effective are useful in a very limited number of infectious diseases, and in the vast majority of infections the practitioner works more or less blindly. Internal antiseptics, with few exceptions, have been found wanting, and the universal question is, what can be done to increase the individual resistance? Or what can be done to aid those physiological processes that overcome the micro-organisms? It is a search for general "neurosthenic tonic treatment."

Rousseau classified cinchona, and the bitter tonics as neurosthenic tonics, and even to-day these drugs are used very much in septic conditions, but others have been added, the value of which is still in dispute. Alcohol, which was used so extensively in the past, to increase vital resistance has fallen into disuse. Attempts of increasing resistance by augmenting the alkalinity of the blood failed to produce the desired result. Many practitioners favor the mineral acids for this purpose, and in practice marked improvement will often follow their use. The preparations of iron hold a high place in therapy for this purpose.

Lately attempts have been made to increase the resistance by the administration of various organic extracts and organic compounds. The administration of urea and meat juices in tuberculosis is following out this principle. The use of suprarenal, thyroid and thymus extracts in infectious diseases have, as yet, offered very little benefit. The need of general tonics to combat infections becomes daily more urgent.

In conclusion, we wish to point out that the resistance to infection has little to do with the nervous system, and the term neurosthenic tonic is probably inappropriate.

THE BACTERIOLOGY OF CYSTITIS.

The causation of inflammation of the bladder was connected with colds and injuries until the advent of bacteriology. "It may indeed be regarded quite as an open question whether we have a right to believe in inflammation occurring in the bladder, irrespective of mechanical cause or the presence of some chemical irritant, and otherwise than as the effect of long continued sympathetic irritation."—(Owen Rees). This was the general opinion among surgeons until a little more than a decade ago.

Now, except a few forms of bladder irritability, all cases of cystitis are ascribed to bacterial origin. But the affection is not a specific disease; it depends on a great variety of micro-organisms.

Quite extensive researches on the bacteriology of this affection have been made by Brenner, Halle, Albaran, Posner and many others. The latest contribution is by Brown (*Bulletin Johns Hopkins Hospital*, 1901). As other investigators, he found that the colon bacillus is the most common organism found in all cases of cystitis. As this germ does not decompose the urine, it is usually an acid cystitis. Brown, in 60 cases, found the staphylococcus aureus 7 times, bacillus tuberculosis 6 times, proteus vulgaris 2 times, staphylococcus albus 4 times, and the bacilli typhosus, pyocyanus and a few unidentified bacteria.

The bacteriology of pyelonephritis is the same as that of cystitis.

The bacteria gain entrance to the bladder in a variety of ways—through the urethra, from the kidneys with the urine, and from contiguous parts. The most common route is the urethra.

But the possibility of an infection through the urine from the kidneys must be constantly kept in mind. In many of the acute infectious diseases bacteria enter the circulation; they are often excreted by the kidneys, and in a weakened state of the bladder may start an infection at that point. Many cases of cystitis occur after typhoid fever, influenza, pneumonia and septicemia.

The principal predisposing factor is stasis of the urine in the bladder. If the bladder is frequently and completely emptied there is little danger of infection, but when the urine remains in the bladder for many hours or days and is not completely emptied the bacteria have a chance to thrive.

EDITORIAL COMMENT.

Faulty Fumigations.

That our methods of fumigation are not all that could be desired is generally understood, but it is also true that too much reliance is placed upon it. Bedding and clothing piled in a heap are often exposed in the fumigated room, and afterwards used without further sterilization. But it has frequently been demonstrated that the ordinary methods of fumigation are ineffective, except on colonies which lie exposed. A layer of clothing effectually protects the germ from the gas.

Clinically, too, it is well known that infections take place after fumigations. The writer has had this happen several times. Patients who were treated for scarlet fever, strictly isolated, and after thorough recovery, were permitted to mingle with others without carrying the infection; but as soon as the room, which had been fumigated, was again occupied a new outbreak of the disease resulted.

It is generally known that the formaldehyd fumigations do not kill insects; its fatal effect on bacteria may therefore be questioned.

Altogether we should not depend on fumigation exclusively for rendering our infected dwelling free from contagion. The fumigations should be supplemented by scrubbing the floor and walls with an antiseptic, boiling the bedclothing and prolonged airing of household articles which can not be subjected to chemicals or heat. It is well, then, to remove all unnecessary furniture from the sick-room at once.

Multiplicity of Toxins Produced by the Same Micro-Organisms.

The elaboration of toxic substances by certain bacteria finds its analogy in the poisonous plants of a higher order. Certain plants contain poisons which chemically are frequently shown to be multiple. A given alcoholic extract of opium or cinchona contains a large number of active substances; the same is true of pathogenic bacteria; they produce a multiplicity of toxins and, therefore, the disease processes are the result of the combined action of all toxins.

Just as a plant under different environments may contain its various constituents in different proportions, so the micro-organism may at different time produce poisons, the quantitative relationship of which is very different. The resulting symptom complex may, therefore, vary and certain symptoms be particularly prominent.

The multiplicity of toxins has been particularly studied recently by Charrin (*Deutscher Medizinische Wochenschrift*) in the bacillus pyocyaneus. He found that a variety of poisonous products were the result of this growth. The effects of certain volatile substances are first apparent and increases the susceptibility to the true toxins.

The Harmful Influence of School Life.

The general impression that modern school life has a more or less injurious effect on the body of the average pupil depends on well-grounded observations, but the etiological deduction that it is due to overstudy is not based on very accurate premises. There is need of more exact observation and research in this field. No doubt, in every school there are one or two pupils, especially girls, who, impelled by an inordinate desire to excel, will study too hard, and the symptoms of neurasthenia are the natural result of this mental strain and the insufficient bodily exercise. Yet a large proportion of girls become anemic and suffer from nervous disorders; many of these do not study too much, in fact, their progress in the school may be very slow owing to their constant idleness.

We must, therefore, seek for other pernicious influences. One of these undoubtedly is the liability to infection, particularly diseases of the air passages. The number of cases of tonsillitis, rhinitis, laryngi-

tis and bronchitis is constantly very large, and continuous attendance at the school is not the best method of overcoming these disorders. The depression of being in a room filled with other pupils, breathing the vitiated, often germ-laden air favors slow recoveries. Following these prolonged infections various grades of anemia result, which is continually increased by defective exercise and alimentation.

We feel convinced that more stress should be laid on the hygienic surroundings of the school than on the overwork.

Serum Treatment of Rheumatism.

Of special interest is the report that an effective serum has been prepared against rheumatism. Practitioners know that the salicylates are by no means specific remedies, and the patient is compelled to pass through a period varying from three to six weeks before he is permanently relieved from suffering. According to the *Medical Record*, Menzer made cultures of streptococci from tonsils of rheumatics. These were used for immunizing animals, and from them a bactericidal serum was obtained which, when injected into rheumatic patients, shortened the course of the disease and prevented relapses.

The one weak point concerning the whole study is that the serum was prepared from streptococci, which probably stand in no etiologic relation to the disease. While, no doubt, the individual resistance was thereby increased, it is very questionable that this serum will be sufficiently beneficial to warrant its general use. Until the specific micro organisms have been definitely isolated, we can hope very little from serum therapy.

Gastrosia Fungosa.

The nomenclature of gastric diseases is becoming very cumbersome; already the general practitioner finds difficulty in remembering all the described affections of the stomach. What was formerly termed gastric neurasthenia, is now found to be a great variety of diseases. Knapp, of New York, (*Medical Record*, Sep. 6, 1902) claims to have discovered in very common affections of the stomach a constant physiologico-chemical condition, that is, an increase in the organic acids. He calls all of them collectively organacidia gastrica. A special variety

of this is gastritis fungosa. He applies the name gastritis to physiologico-chemical disease while the term gastritis is reserved for anatomical diseases.

The cause of this affection is a growth of mold in the stomach. It is a very common affection, and its treatment very effective.

It will take more proof than Knapp has, as yet, offered to convince the profession that common mold can produce a chronic disease of the stomach.

The Medical Exhibit at the World's Fair.

We call especial attention to the announcement of the medical exhibit of the Louisiana Purchase Exposition published elsewhere in this number. We trust the medical profession in general will take an interest in this department and aid in every way to make the exhibit as complete and instructive as possible. Thousands of physicians will visit the exposition, and the exhibit should be such as to make a lasting impression by the extraordinary educational values of the things presented. An exposition is nothing if it does not increase the general knowledge of the people, and even the physicians should derive more than entertainment from this gigantic enterprise.

MEDICAL RESEARCH.

Review of Progress in Physiology, Physiological Chemistry, and Experimental Medicine.

In Charge of

JOHN ZAHORSKY, M.D., A. S. BLEYER, M.D., and PHILIP NEWCOMB, M.D.

Can a Specific Serum Possess Curative and Protective Properties?

Review of Modern Theories of Immunity.

Due credit must at once be given to a valuable article by Tavel in *La Semaine Médical*, of July 9, 1902, from which very many valuable passages are abstracted.

The writer of this article divides bacterial poisons into two chief groups: The toxoproteins and toxalbumins.

The toxoproteins are properly the protoplasm of the bacterial cells diffused into the body fluids—the blood.

The toxalbumins are secretion products of microbic cells; this substance being of the nature of a ferment.

Their difference is readily determined. Those of the first group—

a. Are not capable of dialysis.

b. Are precipitated by sulphate of ammonia.

c. Have a marked affinity for mercury (on which grounds the antiseptic power of this metal is in a measure explained).

d. Their toxic effect on the organism is very rapid.

The toxalbumins differ from albumin in that they—

a. Are not precipitated by boiling.

b. Are very soluble.

c. Are destroyed by a temperature of from 58 to 60°C.

d. Are not absorbed by the intestines.

e. Are effective in the organism only after a considerably long period of incubation.

For example, if the toxin of the bacillus pestis (a toxoprotein) is injected into the peritoneum of an animal it will produce violent cramping in a few seconds. If, on the other hand, the toxin of tetanus bacillus (a toxalbumin) is injected, the cramping and contractures do not appear for from one to several days.

Both of these groups—toxoproteins and toxalbumins, possess the property of producing in the organism their own specific antibodies.

For the toxoproteins such antibodies are classed as immunizins and agglutinins; those from the toxalbumins as antitoxalbumins or anti-toxins.

Sera carrying such microbic end-products are classed as specific sera.

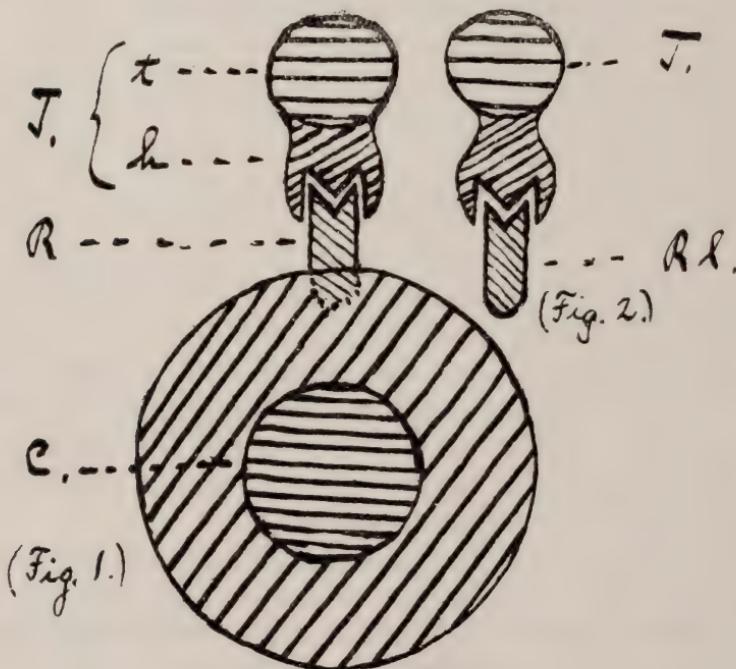
Just how these antibodies are effective have been broadly discussed. Ehrlich's theory doubtless is the most generally accepted, although the humoral theories, supported by such men as Behring, Buchner and Flügge, and the phagocytic theory of Metschnikoff deserve the closest attention.

In his theory, Ehrlich presupposes the toxin molecule to be made up of two groups (see descriptive illustrations): The haptophore

group, the stable portion which serves to fix the poison, and the toxophore group which is the active and free portion.

The toxophore group is readily changed by many physical and chemical influences. A modified toxin, or toxalbumin, being in such instances produced, which by Ehrlich has received the name *toxoid*. He subdivides toxoids into protoxoids, syntoxoids and deuterotoxoids, according to their degree of affinity for antitoxins (receptors).

He recognizes yet another class—the toxones, whose affinity for the antitoxins is yet more feeble than that manifested by the toxoids.

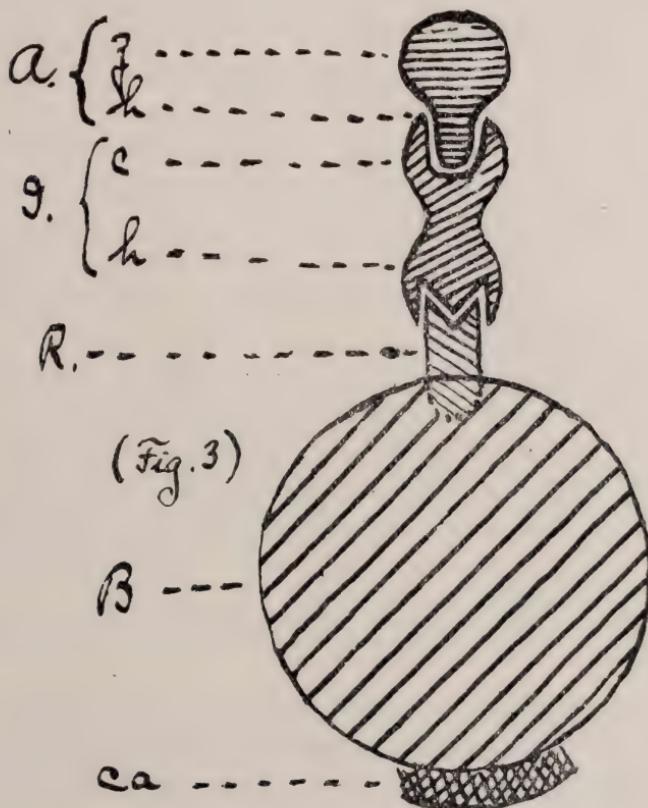


THEORY OF ANTITOXIN.

C, Cell; R, Receptor of cell; T, Toxin molecule anchored to cell by cell's receptors (t, Toxophore group; h, Haptophore group); Rl. Free receptor; T, Toxin molecule thus neutralized.

It is important to note that the toxoids and toxones possess the power of fixing themselves to the cells of the organism, *e.g.*, the blood cells, just after the manner of the toxalbumins, and demand as well, as much antitoxin to neutralize them as the existed toxalbumin not modified. The haptophore group remaining fixed in the cells—satisfied.

If toxins, or as well toxoids, are introduced into the organism, certain cells, those sensible to the given toxin molecule, will at once become invaded. The haptophore group becomes fixed, this occurs because of the presence of the receptors, or side-chains of the cells (a conception necessary to demonstrate the union of the cells and haptophore group).



THEORY OF IMMUNIZATION.

B, Bacterial body; R, Receptor of bacterial body; Ca, Capsule of bacterial body; I, Immunizine (amboceptor, sensibilisatrice, immunkörper); c, Complimentophile; h, Haptophore group; A, Alexin; (h, Haptophore group; z, Zymotox.

These side-chains or receptors are simply parts of any living protoplasmic cell by which the antitoxic molecule anchors its haptophore group. But, on the side of the partly damaged invaded blood cell, carrying a toxic molecule, there occurs a reaction, overgeneration of the chains or receptors.

The existence of a law to justify this conception of regeneration

has been verified by Weigert, and the analogy of conditions under which it is made manifest is highly striking here.

The overproduction of receptors means nothing more nor less than that there are just that many more units formed by the blood cells from themselves, that can take up the existing toxin molecules, the receptors then becoming properly units of antitoxin force.

The neutralization is effective in this way whether such receptors are formed in the body by direct infection or whether they are abstracted from an actively immunized animal and then served by injection to passively immunize another animal.

On this explanation, *i.e.*, that the antitoxin sera are effective because of the great numbers of free receptors which they contain is an evident explanation of the fact that whether they be injected into an organism before or during the time of toxin invasion, such invading molecules will be neutralized, since antitoxin is not destroyed at all rapidly by the body fluids.

Assuming now immunization from the side of the humoral theory, laying aside the fit and imaginative theory of Ehrlich, which is applicable in only a limited number of infectious diseases in which, above all, toxalbumins are formed, *e.g.*, diphtheria, we come to that other class of infectious diseases in which the theory of immunization by specific sera requires other premises and in which the theory of the side chain receptors is not sufficient.

Such infectious diseases as typhoid fever and cholera come in this group.

The immunizines, as has been stated, are the products of toxoproteins and not of toxalbumins, and the manner of action of the specific sera produced by their action on the living cells is not that of antitoxin.

The word antitoxin can be held as synonymous with receptors, for the free receptors are the neutralizing and vital antitoxic principles.

The investigations of Morgenroth, Ehrlich, Bordet, Wasserman and Wechsberger have demonstrated the fact that all specific toxoprotein sera depend absolutely upon the *alexins* for their action.

The proper substance which these sera contain, named by Ehrlich immunkörper or zwischenkörper or amboceptor, by Bordet substance sensibilisatrice, by Buchner immunizine, is of stable character, resists

fairly high temperatures, but is not at all bactericidal; its power depending simply in directing and fixing the alexin upon the given toxin molecule (see descriptive illustration).

The alexins, on the other hand, named variously, by Ehrlich compliments or addiments, by Duclaux lysins, by Bordet proteolytic ferments, are of non specific character, are not very stable, but are certainly bactericidal.

By themselves they are of little use in the organism and are easily overwhelmed, or set aside as it were, because of the want of something to fix them to the toxin molecules.

It is needless to cite the many and comparatively simple tests that prove the existence of these two separate substances upon each of which, but taken together, the germicidal power of any serum of this class entirely depends.

Now, here in the case of the immunizines, as was shown with the antitoxins, it is also necessary to presuppose the existence of two groups—two groups, respectively, for the alexins, and two groups for the immunkörper (sensibilisatrice).

For the alexins, the stable group which fixes itself to the toxin molecule being called again, the haptophore group, and the free and active group, the zymotox.

The two groups of the immunkörper are called the haptophore group, that one which anchors itself to the receptor or side-chain of the bacterium, and the complimentophile group which serves to fix it.

This conception of a bacterial receptor is here necessary, but simply as a means of joining the alexins to the bacterium.

Since we have, therefore, in a serum, which can be extracted from an animal body, a quantity of alexin (a substance of bactericidal power) and we draw from an actively immunized animal a substance capable of fixing this alexin, we have finally a serum which will, when it comes in proximity to a bacterium, speedily neutralize such bacterium.

Such alexins and antibodies are carried in the healthy organism for different periods, retaining their virulence for varying lengths of time but are always effective for at least a number of days, and are, therefore, positively preventive in their action, if only to a degree.

That they are curative is understood from the rationale of their mode of action toward the toxin elements.

A final word need be said on that other class of specific sera—the bactericidal sera, those depending neither upon the possession of specific antibodies, proteolytic ferments, alexins or receptors.

When certain bactericidal sera are injected into the peritoneum of an animal, the phenomenon described by Pfeiffer occurs. The bacteria, instead of continuing to multiply, lose their activity, and form into groups, become immobile, lose their affinity for coloring matters, and are rapidly dissolved and taken up by the phagocytes.

The same phenomenon occurs *in vitro*, of course, only when fresh blood serum is added to the specific serum.

When the injection of a specific bactericidal serum is made sometime before the inoculation of the infecting bacteria, a greater quantity needs be injected than if the two forces come into play simultaneously.

The duration of bactericidal power after injection is less, in the case of most bacteria than is the duration of effectiveness with the two other classes of serum.

But the phenomenon described above by Pfeiffer does occur if the injection of a specific bactericidal serum is made, even a considerable time before the inoculation.

Theoretically the bactericidal sera should have a broad field of application, but such has not yet proven the case. The field of its usefulness is still narrow. The pest serum has given promising results. The bactericidal typhoid serum seems so far to be a failure.

The most striking results have been obtained in a scattered number of cases of streptococcic poisonings, wherein certain circumstances have governed the infection, wherein the antistreptococcic serum was from an identical bacterial source as the infecting coccus.

As is known, this example is, even sometimes entirely wanting, the efficacy of the serum being *nil*.

The recent work of Marmorek has thrown a little light on this subject, the factors of polyvalence and monovalence of serum being thoroughly questioned and gone over in his work. Marmorek has produced serum perfectly bactericidal to the action of the most virulent streptococci. This same serum was ineffective in infections from other forms of streptococci that had inaugurated very mild types of sepsis.

It is demonstrated that the bactericidal sera are not effective in very large doses, and that there is a maximum limit as well as a mini-

mum. This is not the case in other specific sera. In antitoxin serum, for example, so far as the power of the serum is concerned, there is no concern besides having the quantity sufficient to neutralize all receptors, toxoids and toxones present.

The last named bodies, the weakest of all in their affinity for the antitoxin bodies, are the cause, according to a recent investigation of Madsen, of the late palsies and other sequelæ of diphtheria, not prevented by the antidiphtheritic serum.

Plainly the deficiency is merely a matter of quantity.

In resolving the question of the preventive power of specific sera, it will be seen from the above elaboration, necessarily slight and cramped, of the premises of the subject, that a specific antitoxic serum or a specific toxoprotein serum, and even a bactericidal serum, although to a less degree, possess properties necessary to make them preventive. That they can be administered prior to infection, and that the free antitoxin receptors in the one case, and the antibodies in the other, will retain their virulence in the body for a length of time variable in the case of every bacterium, but of some duration in almost everyone.

Duration of Immunity by Diphtheria Antitoxin.

Henry D. Jump (*Pennsylvania Medical Journal*, May, 1902) discusses the duration of immunity by diphtheria antitoxin and cites the opinions of various observers, viz.: Kassowitz denies that the serum confers the slightest degree of immunity, because the disease itself confers no immunity. He gave doses of only 120 and 150 units.

Variot says immunization is not advantageous in a disease which can be so readily cured by the serum.

Behring demonstrated the presence of considerable quantities of antitoxin in the blood of children three or four weeks after the injection of 250 units, and Rubena showed that 200 units protect for four weeks.

Passini, however, in four cases was unable to find any antitoxin after eleven days.

Bomstein injected 8,000 to 10,000 units into dogs and found that one-half had disappeared on the second day and all by the eighteenth day.

William Bullock injected 25,000 units into an ass and found that the maximum was reached in twenty-four hours; on the fourth day one-

third was lost, on the twenty-fourth day a little less than one-half remained but it was still present in minute quantity at the end of one hundred days.

Lohr injected 254 exposed children, in age from 2 months to 14 years, with doses of 100 to 3,000 units. The earliest case to appear was in twenty-one days, and when the injections were repeated every four weeks no new cases appeared, and in those stricken there was sufficient antitoxin remaining in the blood to greatly modify the virulence of the attack.

Morrill treated 1808 exposed children with from 150 to 250 units of antitoxin every twenty-eight days; 7 new cases developed, 2 of whom had insufficient doses; 2 others developed within twenty-four hours, and 2 appeared in twenty-two or twenty-three days.

Biggs and Guerard injected 17,516 exposed persons; among these, 131 cases appeared within thirty days, 109 of which were mild and one fatal; after thirty days 20 mild and one fatal case appeared. They concluded that the average duration of immunity is four weeks.

Jump has been accustomed to administer 500 units to all exposed children, and the following conclusions are reached from his cases:

1. That diphtheria antitoxin is practically harmless and all exposed persons should receive an immunizing dose.
2. Two hundred and fifty units should be given to children under 2 years of age, and 500 units to all others.
3. That the immunity will last for at least three weeks, provided reliable antitoxin is used.
4. Exposed persons should be removed from infected surroundings, by disinfection or change of location; if this is impossible the immunizing dose should be repeated every third week.

DIAGNOSTICS.

The Remittent Limp.

Shaffer (*New York Medical Journal*, August 16, 1902) believes that the early remittent limp in the first apparent stage of hip joint disease is not as yet sufficiently recognized, nor is its importance fully appreciated by the medical profession. The limp may be absent a week or more and then return, perhaps to remain permanent, perhaps

again to intermit. The muscular protection of the joint does not wholly disappear with the limp.

Lumbar Puncture for the Positive Diagnosis of Tuberculous Meningitis.

Hand (*Philadelphia Medical Journal*, August 30, 1902), in an interesting article, finds among the difficult diagnostic problems the determination of the existence or absence of meningitis to stand well to the front. The symptoms must be carefully considered and when such symptoms as headache, intolerance to light, rigidity of the neck, retraction of the head, strabismus, ptosis, vomiting, irregular pulse and respiration, exist, the diagnosis is fairly clear. To these symptoms others confirmatory of the disease are of great value: Convulsions, stupor, the hydrocephalic cry, the cerebral tache, constipation, sinking in of the abdomen, exaggeration or absence of the knee-jerk, ankle clonus, Kernig's sign and local palsies. Since meningitis may cause only a few of these symptoms, and any of them may be produced by other causes, the diagnosis of the disease is by no means easy. Lumbar puncture is a valuable aid in doubtful cases. The changes which occur in the cerebro-spinal fluid as a result of meningitis are diminution or absence of sugar, increase of albumin and, except in simple serous meningitis, the presence of leukocytes, bacteria and, frequently, endothelial cells.

Polyhydramnios.

The diagnosis is made by first diagnostinating pregnancy, then by observing that in polyhydramnios we can usually obtain evidence of faint uterine contraction, and can often insert the finger through the cervix and detect a presenting part. Ectopic gestation must be kept in mind as polyhydramnios may complicate ectopic pregnancy. In ovarian cysts the illness is longer, the swelling at first unilateral. The intermittent hardening of the tumor is absent and the uterus can be found but little enlarged. In ascites the dulness changes when the position of the patient is altered.

When pregnancy is found, a second diagnosis must be made to recognize or eliminate the presence of pregnancy and ovarian cyst, pregnancy and ascites, plural pregnancy and hydatid mole, a very large child or a malformed fetus. In hydatid mole the pear-shaped uterus has little fluctuation and there is repeated discharge of blood

In large or malformed fetus the heart can usually be heard and palpation reveals the child. While twin pregnancy can generally be recognized it may be completely mistaken for hydramnios. In exceptional cases ovarian cysts complicating pregnancy may be difficult to diagnosticate and exploratory incision may be necessary.—Davis, *Boston Medical and Surgical Journal*.

Simulation of Acute Peritonitis by Pleuro-Pneumonic Disease.

Barnard (*Lancet*, August 2, 1902) reports several cases illustrating the difficulty of excluding inflammation of the peritoneum in certain cases of diaphragmatic and parietal pleurisy. The abdominal wall is very tender and painful; this tenderness is unilateral but may extend over the whole abdomen. This pain may be attributed to hepatic or biliary disease. The abdominal muscles are firmly contracted and the muscles feel hard; the respiration is of the costal type, but the abdominal wall relaxes at each inspiration; gastric disturbances may be present. The rapidity of respiration is the most important diagnostic aid.

Diseases of the Sigmoid Flexure and Rectum.

F. R. Edwards (*British Medical Journal*, July 19, 1902) says pain in the rectum is a symptom of fissure, of hemorrhoids, of ulceration and of certain morbid growths. In fissure the pain is very severe and out of all proportion to the size of the lesion, and lasts for several hours. In hemorrhoids the pain varies as the degree of inflammation of the parts. A thrombotic pile always causes pain. In ulceration, whether simple or carcinomatous, there is every variety of pain, depending upon the site of the lesion—less when high up, more when low down in the sphincteric region.

Hemorrhage comes next to pain in order of frequency as a symptom of rectal disease. It is usually insignificant in quantity in fissure, but in the case of internal hemorrhoids considerable blood may be lost. In these cases the blood is usually venous, but may be arterial. Carcinoma of the bowel is usually attended with some hemorrhage, the feces being streaked with blood, though it may be so severe as to produce fainting.

Protrusion of the rectum occurs in piles, polypi, villous growths and prolapsus recti. Too much reliance must not be placed upon the nature and form of the stool; if a stricture is present, but high up,

the feces may be of normal size when voided; again, ribbon-like movements may be due simply to a spasmotic action of the sphincter.

The presence of pus indicates the existence of an abscess or blind internal fistula, ulceration and stricture, or of an acute proctitis, such as a gonorrhreal inflammation.

The escape of mucus suggests catarrhal inflammation or, possibly, invagination or intussusception. When there is a large watery discharge like the white of eggs, a villous tumor is almost sure to be present. Mucous casts point to a membranous colitis.

For examination, the author is in the habit of relying on the finger alone in the majority of rectal cases, but for some the use of the speculum is not only desirable but necessary; and for this purpose he uses almost entirely Kelly's tube—or the proctoscope, although a bivalve speculum is useful for douching the rectum or in making applications.

Contraction of the Iliopsoas Muscle.

Meltzer (*New York Medical Journal*, July 19, 1902) has studied systematically the help which palpation of the abdominal viscera may derive from the thickening of the iliopsoas muscle during its contraction. Herein lies a method which in many cases can be employed satisfactorily as a diagnostic aid in palpation of the viscera surrounding the iliac fossæ. The viscera which rest upon the iliopsoas muscle are the appendix, cecum, a part of the ascending colon, small part of the ileum on the right side, and the sigmoid flexure and part of the descending colon on the left side.

The patient should be directed to raise his thigh without flexing his leg; this induces contraction of the psoas and its elevation can be felt. Passive flexion, or allowing the foot to rest on the bed, will do away with the contraction. This elevation of the psoas during its contraction renders valuable service in many ways:

i. It can be used as a landmark. It is often very helpful to know whether a certain painful spot or a palpable resistance is located on the psoas or on its lateral or its median side. I remember a case in which a prominent surgeon thought that he distinctly felt the appendix running downward. My suggestion that it was the external iliac which he had under his fingers he thought impossible on account of the position of the body under his fingers on the lateral side of the psoas. A slight flexion of the thigh soon demonstrated that the palpated body was on the median side of the muscle.

2. The elevation brings the viscera above it nearer the surface and nearer the palpating fingers. By this aid the outlines of the viscera are often much more distinctly ascertainable than under the usual palpation; furthermore, the usual resistance of the contracting abdominal muscles is often considerably lessened while the thigh is moderately flexed.

3. The outlines of the viscera are more easily palpable when they are moved under the fingers while riding on the elevated back of the psoas than when they are flatly stretched on the even surface of the iliac fossa.

4. By repeatedly increasing and decreasing the flexion on the thigh the viscera moves to and from our fingers and sometimes render to palpation an assistance similar to that which is derived from the respiratory movements.

5. When the active flexion approaches a right angle, the viscera can often be felt moving perceptibly headward on the steep slope of the psoas elevation. The movement is absent when the viscus is adherent.

6. By alternate abduction and adduction of the thigh while in a flexed condition the psoas elevation moves from side to side and assists the palpation in many ways.

The Early Diagnosis of Paresis.

F. X. Dercum (*American Journal of Insanity*, April, 1902) says that general ill health with a general resemblance to neurasthenia is first noticed. But the typical fatigue syndrome of neurasthenia is wanting. The friends of the patient notice that he no longer attends to his business as well as formerly. He may look somewhat tired or a little sleepy. His attitude and movements suggests a general loss of tone. Sometimes he is troubled with various vague, distressing sensations about the head, such as fulness, pressure or constriction, or ringing of the ears, giddiness or vertigo.

Rheumatic or tabetic-like pains are felt, or headaches of great severity. In the neurasthenic patients the symptoms are almost exclusively subjective. In paresis, it is the friends who usually bring the patient to the physician and detail the symptoms. The patient complains little except of the pain.

A neurasthenic is at his best in the evening, at his worst in the morning. The reverse is true of the paretic, who early shows qualia-

tive mental changes, especially in loss of memory. Unwonted profanity, coarseness or irritability may be noted. Mental depression may develop, confusing paresis with melancholia.

After the physical signs have made their appearance, the diagnosis of paresis is relatively easy.

THERAPEUTICS.

In Charge of W. L. JOHNSON, M.D.

Heart Stimulants.

Edwards (*New Albany Medical Herald*, August, 1902) considers direct cardiac stimulation by alcohol as out of the question, save in those preparations which, as champagne, contain other ingredients. In acute collapse, especially of the psychical variety, it is of benefit.

In the collapse of acute toxemia or other conditions, the vaso-dilatation is general, but particularly concerns the deep abdominal vessels, and here strychnin is indicated, not only because of its general effects but because of its vaso constricting powers on the deep vessels; since it is known that the drug tones the abdominal vessels while the vascular tonus in the skin and brain is not increased, thereby flushing the brain vessels and stimulating the bulbar vasomotor and other vital centers.

It is Edwards' personal opinion that opium and morphin are not sufficiently recognized as vascular and cardiac tonics. Many clinicians withhold these remedies in pneumonia and typhoid, for example, even when maniacal outbursts and active delirium would demand the drug, because, it seems, of theoretical objections. One constantly encounters objections to the use of morphin for pain, restlessness or delirium, because the drug depresses respiration, and ill effects upon the circulation are feared. In its free use in pneumonia and other acute toxemias, the drug seems to decrease the irritability of the respiratory centers, thereby lessening cough and dyspnea, with the attendant headache and insomnia, and invariably acts as a strong cardio-vascular tonic. The prototype of the chemical cardio vascular stimulants is now, as always, digitalis.

Dilatation is the essential indication, according to many clinicians,

for the use of digitalis, and is signalized by the usual signs, as a weak first-tone, etc. The second indication is functional dissociation. The drug co ordinates the cardiac activity and, therefore, is used for irregular cardiac action.

Again, it is indicated where rapid heart-action is observed. The contraindications are :

1. Balanced compensation.
2. If rest in bed, active purgation, etc., have not been previously attempted.
3. Adequate hypertrophy.
4. Where danger exists in the direction of vessel rupture, as in very marked atheroma, aneurysm, etc.
5. *Marked* fatty degeneration of the heart, not fatty degeneration *in toto*.
6. When the vessels are contracted strongly, we obviate angio-spasm by combining the drug with strophanthus or nitroglycerin.

When digitalis is given for a long period it is his personal preference to combine it with the iodids.

Alcoholism Treated by Hyoscine Hydrobromate.

Bering (*Therapeutic Gazette*, August 15, 1902) reports the cure of a prominent citizen on the verge of delirium tremens. He started the treatment with 10 grains of calomel. He then gave hypodermics of hyoscine hydrobromate, grain $\frac{1}{100}$ and $\frac{1}{200}$, sometimes hourly. Strychnin and pilocarpin helped out. After four days Bering took his patient home and since that time the man has not taken a drink or desired one. This method—"hyoscine intoxication," has been used successfully in the cure of the morphin habit.

Apomorphin in Puerperal Convulsions.

Kitchens (*Ibid.*) has used this drug successfully in eclampsia. Having observed that apomorphin was not only a "typical central emetic" but also a powerful diaphoretic — almost the equal of pilocarpin, without its tendency to produce pulmonary edema, he resolved to try it. He recommends $\frac{1}{20}$ grain, repeated in half an hour if necessary; he has not had to repeat the dose, but thus far has used it only in post-partum cases.

Treatment of Chronic Nephritis.

Rochester (*American Medicine*, August 23, 1902). "As the symptoms indicative of the existence of chronic nephritis are the result of toxemia which depends upon the non-elimination from the body of certain catabolic materials that should normally be carried off through the kidneys, and as these organs are in such condition that they can not accomplish all the excretory work that they should, all other avenues of elimination should be opened up for the escape of these poisons." This is accomplished by keeping the bowels open by the use of salines and the occasional administration of a dose of calomel; by occasionally washing the contents of the colon with copious enemas of mildly alkaline water or water with a little salt dissolved in it, followed by a high enema of 400 to 600 cc. of pure olive oil.

Above all is exciting the activity of the skin by means of hot air or steam baths accompanied or followed by massage. These baths are easily administered—the patient in bed between blankets, by means of the simplest of contrivances; the steam is supplied by a vessel something like a croup kettle and the hot air by a piping bent and at the lower funnel end having legs to admit of air for the burning of an alcohol lamp which is just under the funnel extremity.

Prescription.

R	Spirit. amon. arom.....	
	Spirit. lav. comp.....	
	Tinct. camphor.....	
	Pulv. rhei et magn.....	
	Spirit eth. comp.....	aa 3ij
	Spirit. menth. pip.....	
	Tinct. opii deod.....	
	Aq. chloroformi.....	aa 3j
	Tinct. capsici.....	3ss
	Aq. fennel	q.s. ad 3iv

M.

Crowley (*Medical World*, August, 1902) gives this as "a carminative mixture suitable from infancy to old age."

It is certainly long enough to reach.

Sodium Glycocholate in Diseases of the Liver.

Keown (*Jour. Am. Med. Ass'n*, August 16, 1902) has used this drug in affections of the liver and believes it prevents the formation of

gall-stones. It is of use in all cases where rapid absorption of fat is desirable—convalescence from typhoid fever, cases of diabetes mellitus, etc. Richardson reports the use of sodium glycocholate at Mt. Hope Retreat, where they are led to suspect a torpid condition of the liver, with success especially in cases of alcoholism, morphin habit, neurasthenia and melancholia.

Effect of Rest Upon the Progress of Septic Infections.

Ochsner (*American Medicine*, August 30, 1902) advocates rest in infections of septic nature. Septic infections progress through the lymphatic circulation, and to retard as much as possible the circulation of lymph by inhibiting motion of the surrounding structures is an important aid in keeping the sepsis localized and in causing the sepsis to subside. Every practical surgeon has made the following observation upon his patients many times. A slight infection of the finger occurs from the prick of a needle or from some other slight injury. During the day the finger and even the hand becomes painful. The next morning the pain has entirely disappeared, but during the day returns, possibly more severe and, on the following night disappears again, only to a less extent. After a few further repetitions a serious infection may become established.

In 52 cases of severe infection of the hand treated in the Augustana Hospital those who came for treatment before incision had been made, recovered without deformity or stiffness of the fingers; while of those who had been treated without being kept at rest, in whom abscesses had formed and been drained by free incision previous to their admission to the hospital, a considerable proportion recovered with more or less deformity and impairment of function.

Hospital treatment consisted in obtaining as nearly as possible perfect rest for the extremity, by placing the patient in bed, applying a large dressing composed of sterile gauze and absorbent cotton, saturated with a mild antiseptic solution, most commonly being hot saturated solution of boric acid, to which one third, by volume, of strong commercial alcohol had been added. The whole dressing is covered with oiled silk or rubber cloth. Even in cases in which the end of a finger is involved the entire extremity up to the shoulder is included in the dressing. This makes motion of the extremity impossible. It is likely that the hot moist antiseptic dressings are in themselves bene-

ficial, but rest is of equally as great importance because if this part is neglected it will prevent a rapid and perfect recovery. Examinations and the changing of dressings by those who did not fully comprehend the importance of rest would invariably result in an increase in the infection.

In all forms of acute peritonitis, for instance, resulting from an infection from the vermiciform appendix, the Fallopian tube, the gall-bladder, an ulcer of the stomach which threatens perforation, the same principle obtains.

In all these cases it can be observed easily that the infection is greatly exaggerated by motion. So long as the infectious material is in the vicinity of its original location the patient is not very seriously ill, but so soon as it is carried away from its original location either by the lymphatic circulation or mechanical means the conditions are changed at once.

Ochsner treats these cases and septic cases following abortion by washing out the stomach, not giving cathartics and taking every measure, as not giving food by the mouth, to secure rest, resorting sometimes to ice coils over the abdomen and, if necessary, morphin. Rest in the vicinity of the inflammation is the key to success.

Treatment of Intestinal Lithiasis.

Mazeran (*Revue International de Théráp. Phys.*, July 1, 1902) says intestinal gravel is symptomatic of a condition of very complex nature and must be treated according to the pathologic suggestions. In the first place, there must have been in the early stage of the disease, a certain degree of intestinal stasis. Massage, proper exercise and peristaltic stimulants would, therefore, be indicated.

There is a marked over-production of intestinal mucus, which is an effective disturber of digestion and assimilation.

There are abnormal fermentations. Salts properly existing in a soluble state are precipitated by these fermentation products. Phosphates form freely in the tract and must be neutralized and disposed of. The formation of false membranes at certain points in the food canal is the rule. Antiseptics are, therefore, demanded and their administration should be continued for a sufficient length of time.

As a highly useful adjuvant or, perhaps, of the very first importance is the free administration of some antilithic mineral water.

Mineral Baths.

Veliamovitch (*Ibid.*) has made a study of the systemic value of mineral water baths. He claims that the salts contained in any of these waters are never absorbed by the skin and that the effects of such baths then must depend either upon the mechanical irritation of the salts upon the skin, the temperature of the water, or the mental effect.

He terms treatment of diseases of the body by these baths "balneo-fetishism," which aptly expresses his opinion of their real value.

Hot Baths in Pneumonia.

Arba (*Rev. Acad. di Medica di Torino*) highly recommends hot baths in pneumonia. They are well borne by the patients, reduce agitation, diminish the severity of the pleuritic pains, favor elimination of toxins by the skin and kidneys and do not cause any disturbance of temperature either way.

These effects are probably the result of a superficial vaso dilatation which seems to relieve the heart and to hasten the circulation,

Lecture by Professor William Osler.—It has been announced that Professor William Osler, professor of medicine in the Johns Hopkins University, will lecture upon "William Beaumont, the First and Greatest American Physiologist." The lecture will be delivered under the auspices of the St. Louis Medical Society, and will take place at the Odeon, October 4th, at 8 p m.

Ballooning for Anemics.—Dr. Naugier, of Paris, made astonishing claims as to the tonic and blood-forming effects of balloon ascensions. A two hours' voyage in the air, he declared, causes a marked increase in the number of red corpuscles, and the condition persists for ten days after an ascension. Five such ascensions in the course of six or seven weeks, he said, are more beneficial to an anemic than a sojourn of three months in the mountains. The good effect begins to be felt almost immediately, and a lengthened stay in the air is of no value, and in the case of many is actually detrimental in causing nervous irritation.

Dr. Naugier urged that the municipal council be asked to provide a large balloon, capable of taking to the upper air daily fifty patients who are too poor to afford a change of climate.—*Medical Record.*

SOCIETY PROCEEDINGS.

MEDICAL SOCIETY OF CITY HOSPITAL ALUMNI.

*Meeting of May 1, 1902; Dr. Given Campbell, Jr.,
President, in the Chair.*

Dr. W. C. MARDORF presented a specimen of

Tubal Pregnancy,

taken from a woman whom he had seen after the rupture had occurred. She had been married two and a half months and had not missed menstruation—was menstruating at the time of the rupture, when it ceased.

When he first saw her she was in a state of extreme shock, pulseless, bathed in a cold sweat and hysterical. She had complained of severe cramps for several hours with occasional syncope; there was some distension of the abdomen but he was unable to make an examination because of the extreme sensitiveness of the abdomen.

Laparotomy was urged, and she was taken to the hospital where the operation was performed. It was necessary to use a quart of saline solution, but she recovered. The ovary on the affected side (left) contained a true corpus luteum, and decidua was found at the site of rupture.

A condition of interest is that such a formidable hemorrhage should occur at so early a stage. The specimen is about two weeks old and there were no symptoms previous to the sudden appearance of the hemorrhage.

DISCUSSION.

Dr. FRANCIS REDER thought the early rupture might be explained in two ways: First by the existence of a constitutional disease, such as lues; and second, pregnancy having taken place in the immediate vicinity of the uterine cornu, a portion of the tube that is very much constricted and unyielding.

Dr. A. H. MEISENBACH considered it an interesting fact that a correct diagnosis of the condition was made promptly. In all such conditions he considered the surgeon justifiable in advising operative interference. The fact that we have at our command means of combating hemorrhage is a great comfort to the surgeon and if the injection of normal salt solution has accomplished anything it is in just such conditions which merit for it all that is claimed. This is true of all forms of hemorrhage.

Apparatus for the Injection of Normal Salt Solution.

Dr. MEISENBACH exhibited an apparatus for the rapid subcutaneous and intravenous injection of normal salt solution, which he had devised. It consisted of a rubber bag, or fountain syringe, containing two quarts. To this is attached a nozzle through which the tube passes, and six feet of hose with a glass connection by which means we can always see that the fluid is flowing. There is also a double bulb compressing air apparatus. There are three needles which are constructed with a rather large caliber to facilitate the flow. By means of this apparatus we have four points of ingress of the solution under the skin, which means injecting the fluid four times as fast as by the ordinary means.

For the intravenous injection he had found most needles too blunt, the opening in the vein being difficult to find, and it should not be too large, but hug the needle closely. To facilitate finding the opening in the vein he had soldered to the point of the needle a fine loop of wire which acts as a guide. The only points of originality he claimed were the adoption of the rubber bag, the method of attachment of the needles so that they can be used separately or in conjunction, and the intravenous injection needle.

DISCUSSION.

Dr. REDER thought a point in favor of the apparatus is that the apparatus will not get out of order. It had been his misfortune to find on several occasions that the ordinary apparatus, such as is used in hospitals, was useless when the moment arrived to utilize it. He was a little surprised that no further progress had been made in constructing a more reliable apparatus. The glass tube in Dr. Meisenbach's apparatus, the speaker thought, would enable one to see the fluid but hardly to tell whether it was flowing; the only way to determ-

ine that would be by the diminution in the solution in the bag. The little tip on the needle is of great service. It was his habit to cut a wave-like flap in the vein to prevent the entrance of air after the needle has been introduced. The addition of the shoulder to the needle is an excellent device. The only objection to such an apparatus is that rubber is short lived and to sterilize by boiling would soon destroy the bag, a glass receptaculum with a screw top would most likely prove more satisfactory.

The PRESIDENT asked about how fast the solution could be introduced subcutaneously without too much discomfort to the patient. With this apparatus, by modifying the pressure, the fluid could be introduced as fast as desired, the limit being the amount of pain produced by introducing too rapidly. He asked about how many cubic centimeters could be introduced in fifteen minutes.

He thought the Society was to be congratulated in seeing this apparatus. The guide for the introduction of the needle into the vein seemed to be of value. The problem usually in subcutaneous injection is to maintain the temperature of the water at a proper degree until it reaches the patient's body. The temperature in the fountain syringe is not an indication of the temperature of the water after it has slowly traversed a long tube in a cold room and has reach the body of the patient. It would be of much advantage if some device could be arranged to reheat the water after it has passed through the tube and is ready to enter the patient's body. He had himself tried to do so in a crude way by taking a second fountain syringe filled with hot water and sticking the needle through it. This hot water bag lay on the patient's body. In this way he had found absorption more rapid.

Dr. F. G. NIFONG thought a serious objection other than the practicability of sterilizing, was that we would never be sure of just how much water remained in the container and a likelihood of forcing air into the vein. He believed a glass container would be preferable.

Dr. DAVID GARDNER was much pleased to meet again with the City Hospital internes, but a feeling of sadness was also aroused when he remembered that many have crossed the river, and was reminded that it was simply a question of time when we must all join them.

A transfusion apparatus is something we all need. He had used it on several occasions but only once successfully. He had encountered the difficulty mentioned of entering the vein with the needle, and

on one occasion really introduced the solution into the brachial artery—never reached the vein. The temperature of the water is a matter of importance; he had found the temperature 5 to 10° F. lower at the entrance to the body than in the syringe.

Dr. MEISENBACH, in closing, said the use of antiseptics for sterilizing would probably be necessary with a rubber bag. The glass tube connecting the rubber tubes is serviceable, for we can see the fluid flowing by noticing the air bubbles which necessarily enter and then stop. It will never be difficult to ascertain when the bag is empty or nearly empty, though, of course, it is never pleasant to force air into the circulation; we should be governed largely by the patient's condition and pulse rate. He usually injects as much as the patient can stand—until the tissues become well distended. He believed that two quarts could be forced into the tissues without detriment to the patient in fifteen or twenty minutes. The matter of the temperature of the water is a difficult thing to solve, but he thought it would be solved; it might be done with a coil apparatus. He always has the water in the bag much warmer than he expects it to be when it enters the body.

Dr. GEORGE HOMAN read a paper (see page 254, this issue) on

Typhoid Fever.

DISCUSSION.

Dr. REDER said the case was extremely serious when he first saw it. The symptoms pointed not at all clearly, but only with a certain degree of assurance, to perforation of the bowel. An operation, however, was considered justifiable. In the examination he was impressed with the peculiar winging of the alæ of the nose and the facial expression. The abdomen was distended, but not painful to the touch. No distinct area of dulness could be made out. The mind was perfectly clear. The incision was made in the linea alba. It was necessary to proceed with extreme caution in order to get down to the visceral layer of the peritoneum, the agglutinations of the intestines being so strong that it became advisable to resort to the blunt dissection—the danger of making an artificial perforation was very great. The tissues were dry and markedly congested, no moisture anywhere.

With blunt dissection he was enabled to get into the right iliac fossa. The adhesions were strong and no fluid nor gas was encountered. He endeavored to get above the umbilicus but found it impos-

sible to do so on account of the extensive adhesions. He then effected an opening into the left inguinal region with just as much difficulty as in the right; that fossa was also dry. The intestines that presented were only filled with gas and perfectly clear. The agglutinations were so firm and extensive that it was impossible to proceed any further for fear of perforating them. The smell of the finger disclosed no suspicious odor.

With the approval of those present he thought it advisable to discontinue the operation. Whether there was a perforating ulcer or not, that would have to be disclosed by the autopsy. The condition present were indicative of tubercular fibrinous peritonitis. There was no tuberculosis of the peritoneum.

That the patient suffered from an acute infection he had no doubt, and if we consider the possibility of a perforating typhoid ulcer, we might readily infer that a tubercular peritonitis was engrafted on a circumscribed peritonitis, causing the general peritonitis which was found to exist.

In operating for a perforating ulcer of typhoid fever we are prompted to do so by certain signs and symptoms, such as a rapid decline in the temperature and a pulse rate of increased frequency, etc. A very pronounced symptom is sudden and pronounced pain in the abdomen.

Kussmaul, in 1885, was the first to perform this operation. The patient died.

Luecke performed a similar operation in the same year with no better result.

The first successful result was by Van Hook, who made three laparotomies with one recovery.

J. Price reported three consecutive operations with as many recoveries.

Wiggin collected something like twenty-four cases of perforating typhoid ulcer, subjected to operation, with six recoveries.

Van Hook collected nineteen cases with four recoveries.

The operation is justifiable simply because we know that all the patients who have been operated on would have died without the operation—it is extending to them an only hope.

Dr. GARDNER thought the course of the disease in the two pa-

tients would indicate that the constitution of the two boys was very different.

In the Indian Territory there is considerable typhoid fever as the sanitary conditions are bad. He thought the best results he had obtained were from the use of guaiacol carbonate in about 5 grain doses. He used sponge baths of alcohol and water, half of each, with which he sponged the body every fifteen minutes if the temperature was over 102° F. He had seen two cases of perforating ulcer in typhoid fever. One was the case of a young man who was convalescing and he had stopped his attendance upon the case, when he was summoned one evening about 5 o'clock; he found that the patient had indulged in a large bowl of cabbage soup and was in a state of extreme shock with intense pain and tenderness. The speaker advised operation, but because he could not offer positive hope from the operation the family refused and the patient died.

In another case he suggested an operation but the patient said that would be "sure death," and he was told that he would certainly die without an operation; he said he would think about it in the morning, but in the morning he was dead.

In another case the speaker felt sure that there was a perforation, but the patient recovered without operation.

He asked if the distension of the abdomen was due to air in the cavity, to which Dr. Reder replied that it was due to a gaseous distension in the intestines.

Dr. MEISENBACH said the case of Dr. Homan was very interesting. Ordinarily we do not expect to find such extensive adhesions of the intestines; there may be adhesions of the omentum for that organ seems to be the body-guard of the peritoneal cavity. Whenever there is an injury to the intestines we find the omentum rushing to the part and there is an agglutination. The operations for perforating typhoid ulcer have not as yet been brilliant in their results, but if there is one recovery out of a hundred cases that one would justify the operation.

Dr. HOMAN, in closing, said the grip attack in the fatal case probably had a depressing effect on the vitality of the patient; he was not a strong boy to begin with. He thought the view Dr. Reder advanced as to the condition which caused the adhesion of the peritoneal surfaces was correct. It would be interesting, of course, to know the source of the hemorrhage. He was not prepared to say where the boy

got the disease; it was stated at the time that there were a number of other cases among children who attended the same school. He thought it was probably the water supply.

*Meeting of May 15, 1902; Dr. Given Campbell, Jr.,
President, in the Chair.*

Dr. R. L. CAMPBELL presented a specimen of

Tumor of the Abdomen.

The patient was a man, aged 36 years, single, admitted to the hospital March 27, 1902. Physical examination disclosed an ulcer in the vault of the pharynx, and the tongue was covered with a white coating; the patient was much emaciated. Dry râles in the upper portion of the left lung, right lung normal; liver dulness not exaggerated and spleen not palpable; a chancer scar on the penis. Urinalysis showed albumin and granular and hyaline casts. The diagnosis was bronchitis and syphilis.

April 20, the patient complained of pain in the right leg—hip and knee. On the 30th a large tumor was felt in the left side of the abdomen, firm and tender, and on the right side another mass could be felt; both were dull on percussion. He was placed on potassium iodid and mercury.

May 5 an exploratory incision was made and there was found a large tumor mass so involving the intestines as to be considered inoperable. The patient died May 14th.

Post-mortem examination showed bronchitis, purulent pericarditis and diffused nephritis. The other abdominal viscera showed nothing abnormal except that condition which could be accounted for by pressure from the tumor. The tumor appeared to grow from the mesentery along the lumbar vertebræ, involving the entire left side of the abdomen, the lower part of the right, and the pelvis. In dissecting out the tumor mass it broke and discharged a large amount of purulent fluid. The mass seemed to have broken down into an abscess. There was a similar condition in the peribronchial glands, liver and right testicle. These growths have the appearance of sarcoma, but as yet no microscopical examination has been made.

DISCUSSION.

Dr. H. L. NIETERT said the case was very peculiar. When the patient first entered the hospital he presented no sign of a mass in the abdomen nor trouble with the testicle. He had a distinct history of syphilis, there being a perforation of the soft palate and a chancroid scar; he had been treated for syphilis for six months. When the tumor first appeared it was thought to be an involvement of the retroperitoneal glands by a gummatous growth. After examining daily for a week, pulsation appeared in the tumor and then it was thought it might be an aneurysm, but the pulsations had no expansibility, simply a throbbing, so it was concluded this was transmitted from the aorta.

After consultation, it was decided to make an exploratory incision; this was done and the tumor punctured with a hollow needle, drawing off gelatinous fluid. After examining carefully it was decided the case was an inoperable one and a provisional diagnosis of sarcoma of the retroperitoneal glands made. The abdominal wound closed nicely, but the patient died from exhaustion. The involvement of the testicle was of recent origin. The diagnosis is not yet confirmed as the microscopic examination has not been finished.

Dr. M. J. LIPPE asked whether the pericarditis was not probably due to the operation or if it existed prior to the incision.

Dr. NIETERT said the patient was examined very carefully before the operation and at that time there was no sign of pericarditis.

Dr. ELSWORTH SMITH presented cases (see page 262, this issue) of

Vessel Phenomena in Aortic Regurgitation and Thoracic Aneurysm.

DISCUSSION.

Dr. CHARLES J. ORR had looked into the subject of heart lesion in a limited sort of way and had found nothing to contradict Dr. Smith's statements. He was glad to see the two cases presented together and he was impressed with the ease with which an error of diagnosis could be made in such cases. One might easily have been mistaken for aneurysm where it was clearly demonstrated none existed, and in the other case though the bruit was absent there was a large, clearly-defined aneurysmal tumor.

Dr. L. H. BEHRENS did not think the arm sign was of such great importance because all cases of aortic regurgitation of any degree will

have the Corrigan pulse and the bullock's heart, and the leakage which we readily hear accompanying all these aortic regurgitations; there is a roughening of the first sound. He considered this one of the heart lesions easiest to demonstrate. The importance of the early diagnosis of aneurysm is paramount. When an aneurysm assumes the dimensions of this case the diagnosis is made by inspection. Aneurysm of the arch of the aortic regurgitation are often found together.

In regard to the bruit there is much said about it in the text-books yet he had listened to many hearts where the bruit could not be heard.

He enjoyed the demonstration by Dr. Smith very much but he thought he detected a marked dilatation of the aorta in the case of aortic regurgitation. He thought, too, he discovered a difference in the pulses.

With the specific history and the heart doing a large amount of work a great deal of pressure is forced in the direction of the least resistance and he would not be surprised to find that there was a well-developed aneurysm formed in due time, if it is not already formed, due to the pressure about the aorta. This would explain the more frequent existence of aneurysm in the first portion of the aorta.

The case was presented to the Society a few months ago and syhygmographic tracings were taken of the pulses which showed a difference at that time. There might be a beginning aneurysm as a result of the aortic regurgitation due to a lack of resistance on the part of the artery.

Dr. NIETERT said, in regard to the surgical treatment, that his observation and experience was limited, being confined to two cases. In one case twenty-two feet of silver wire had been introduced into the aneurismal sac and, together with this treatment, injections of gelatin were given to increase the coagulability of the blood. It was a thoracic aneurysm situated about four inches to the left of the spine and corresponding to the 6th or 7th rib ; it was most distinctly heard in the back. A canula large enough to admit No. 28 silver wire was introduced ; the canula was first pushed through the skin and then pushed forward for half an inch parallel with the skin, then turned at right angles and forced into the aneurysmal sac. Three days after the introduction of the wire the gelatin injections were begun, beginning with 50 cc. subcutaneously. Under this treatment the patient improved somewhat as far as the appearance of the tumor was concerned, there

being less expansibility, and it became firmer, but the patient did not improve generally. Two weeks after the operation he developed a purulent bronchitis, from which he died.

Post-mortem there was found a very large aneurysmal sac entirely filled by a firm clot, the clot being somewhat firmer than the one in Dr. Bartlett's case, which the speaker attributed to the use of the gelatin.

Dr. WILLARD BARTLETT said the description of Dr. Nietert's case answered his case in many points, though the details were a little different. The case upon which the speaker operated was an aneurysm of the aorta. The mass occupied the entire upper part of the left portion of the abdomen. The tumor was expansive, the bruit plainly heard and the pulsation transmitted to the hand. In order to avoid the possibility of injuring the abdominal viscera an incision was made in the posterior axillary line, and after dissecting down upon the aneurysmal sac the canula was introduced; this canula was large enough to admit a No. 30 aluminum bronze wire. This wire is very springy and elastic and tends to assume any shape into which it is forced. Fifteen feet of this wire were introduced, but the fatal mistake was made of not forcing the end of the wire down into the sac.

The patient recovered from the operation without appreciable ill effect and on the succeeding days he said the pulsations were growing less, and after the expiration of four or five days he did not complain at all. After progressing reasonably well for a week after the operation he suddenly expired before one of the physicians could reach him, as a result of the profuse hemorrhage at the site of the introduction of the wire. The piece of wire left flush with the skin had prevented the formation of solid union or healing at that site and under the influence of a cough or sudden movement the little wound had spread enough to allow the escape of blood which then opened a tract large enough for hemorrhage.

At the autopsy it was found that the aneurysm had been beneficially influenced in just the way hoped for; a reasonably firm clot had formed throughout the whole of the sac and that was all that was hoped for by the introduction of the wire. The probable reason why the clot was not so firm as in Dr. Nietert's case was that the latter's case lived three weeks while the speaker's case only lived a week, although the gelatin treatment might have had some influence in accom-

plishing this. The vital point is to get a saccular aneurysm, which we succeeded in doing in both these cases, and one where there is no secondary aneurysm in the vicinity. In the speaker's case there was, beside the true aneurysm, a false one off to the right, which could not be diagnosed and would have caused the patient's death had he recovered from the operation.

There is a still later surgical treatment, tried but once to the speaker's knowledge, by Prof. Tuffier, of Paris. He found a sacculated aneurysm of the ascending aorta between the innominate and the heart, and managed to dissect around it through the chest wall and to separate the tissues from it, and then to ligate it. The patient recovered from the operation and lived eight days. A gangrene in the wall of the neck of the sac took place as a result of pressure of the ligature.

Dr. SMITH, in closing, differed with Dr. Behrens in the value of the vessel phenomena in his cases. It is probably true that in the majority of cases a diagnosis can be made without the vessel phenomena, but the speaker had seen cases where this was of immense value to him. He relied more on the vessel phenomena than on any other one sign. It is very important, of course, to consider whether we ever have a regurgitation without this sign. Where the sign is present he believed there was aortic regurgitation with aneurysm, but where it is absent it is not of so much value. Its positive presence is of great value in diagnosis. The cases were presented with the view of showing that aneurysm could exist without the vessel phenomena and, secondarily, that there was no bruit.

In the case of aortic regurgitation he said he was not himself perfectly satisfied that the pulses were equal—there might be slight difference. There was no evidence of a tumor, or pressure symptoms, or dulness, nothing but a certain amount of dilatation, which is found in all such cases. Granting that there was a slight difference in the pulse, however, he did not believe that sufficient evidence to cause a suspicion of aneurysm.

REPORTS ON PROGRESS.

MEDICINE.

In Charge of A. LEVY, M.D.

Hay Fever.

According to J. W. Jersey (New York *Medical Journal*, August 9, 1902) hay fever may be successfully treated in many cases. It is dependent, he says, upon three factors:

1. A peculiarity of the nervous organization.
2. Some abnormality in the nasal structures.
3. Some irritating substances in the atmosphere.

The second of these factors is amenable to treatment. He advises treatment as follows: First, a thorough cleaning of the nose with an alkaline spray, alternating with a 10 per cent solution of cocaine to reduce the swelling; then apply an aqueous solution of suprarenal extract. A drop or two of the suprarenal solution is applied to the conjunctiva, and the patient is given instructions to spray the nose frequently with Dobell's solution, followed by a spray of the suprarenal solution; suprarenal extract, eight grains, is given internally every three hours. This treatment, he says, aborts the attack and gives immunity from further attacks.

These local measures he combines with general systemic treatment, such as iron, quinin, strychnin and phosphates.

Diagnosis and Treatment of Typhoid.

Marsden (*Lancet*). The diagnosis of typhoid rests upon the well-known symptoms—general condition, splenic tumor, rosela, etc. The bacteriologic diagnosis depends upon the finding of the Eberth bacillus in the stools and in the blood from the roseola spots. A further important aid for diagnosis of typhoid is in the Widal serum reaction. The latter was positive in 209 out of 214 of the author's cases of typhoid. The period at which the blood serum shows its agglutinating power differ quite markedly; the later the blood be examined the

more frequently will the reaction be positive. A negative reaction at the end of the first week, according to Marsden, speaks against typhoid with great probability; this probability greatly increases if the reaction remains negative for a few days following; if it remains negative at the end of the disease it speaks almost with certainty against typhoid.

Aside from the serum reaction the appearance of the characteristic roseola in a continuous fever of seventeen or eighteen days' duration stamps the disease as typhoid.

As far as treatment is concerned the principal consideration is the establishment of good hygienic conditions — dry room and proper nourishment. Marsden recommends neither intestinal antiseptics nor typhoid antitoxin. He says the diet need be liquid only in the early part of the disease, while later, according to the general condition, the patient may be given easily-digestible solid food. For the rest, bath treatment and, in case of perforation, surgical interference.

Report of Investigations in Carcinoma.

E. von Lyden and F. Blumenthal (*Deutsche Med. Woch.*, September 4, 1902). The authors publish rather prematurely the results of their investigations upon serum therapy in cancer cases, but they are, nevertheless, of interest.

The first attempts were made upon animals; the attempt to inoculate animals with human carcinoma was unsuccessful though it was possible in a number of cases to carry the disease from animal to animal.

Attempts at cure were made upon dogs affected with carcinoma. They extirpated tumors from dogs so affected; these tumors were cut up and liquefied and the material was injected into rabbits for periods of many weeks. Serum obtained from these rabbits was injected into dogs in which tumors were excited, proven microscopically to be cancerous. After several such injections the tumor began to soften and finally disappeared entirely.

Other experiments were made in which the extirpated tumors themselves were used. A serum expressed from tumors was injected directly into the affected animal with equal success.

The latter method was used in experiments on human subjects. The cases thus far reported are few—they were all hopeless cases; two

of them died after some change for the better had apparently taken place, such as subsidence of swelling and infiltration in the neighboring lymph glands. The third case, an inoperable carcinoma of the uterus, has, according to the authors, improved in the period of ten months during which the patient has been under treatment. They promise more along this interesting line.

Accidental Heart Murmurs in the First Year of Life.

Starck (*Centralb. f. Kinder*, Heft 4, 1902) has for a long time maintained that accidental heart murmurs occur in young children. A short time ago he published four cases in which he had observed this. Now he reports three additional cases, in one of which he was able to make post-mortem observations. He believes that in exhausting diseases, where the heart muscle is degenerated, the insufficient contraction at systole causes an imperfect approximation of the valves and thus a murmur is produced. In the case examined no changes were apparent about the valves or orifices, though a murmur had existed during life.

SURGERY.

In Charge of

A. V. L. BROKAW, M.D., and E. C. GRIM, M.D.

Head Injuries.

The original articles in the *Boston Medical and Surgical Journal* of July 31, 1902, are all devoted to this subject.

Dr. T. J. Robinson writes concerning non-operative cases. He considers the vast majority of contusions of the scalp and hematomata best treated by cold applications and compresses. Scalp wounds are cleansed, drained and closed. The linear fractures and most fractures of the base, either do not call for operative procedures or are inaccessible and the treatment is cold applications, and symptomatic. He bases his diagnosis of basal fractures upon three cardinal signs:

1. The appearance of ecchymosis beneath the skin or mucous membrane due to the spread of blood from the seat of fracture.
2. The escape of blood, serum, or brain substance from the cavities of the skull.

3. Disturbance of function along particular cranial nerves.

Concussion is a condition of sudden loss of consciousness, partial or complete, pallor, disturbance of vision and hearing, loss of muscular power, weak pulse and respiration, perhaps vomiting, having followed an injury to the head. This calls for no surgical interference. Cerebral concussion from hemorrhage is not operable unless the disturbance of the nervous system is such that will locate it in an accessible region.

Dr. Dwight, of Boston, writes on the indications for operation. Dr. Bullard, of Boston, writes on the same, and summarizes as follows :

1. Operate in all cases of compound depressed and compound comminuted fractures of the cranium. It is usually advisable to operate on any compound fracture.

2. Simple fracture of the cranium without symptoms does not, as a rule, demand operation.

3. Absence of consciousness does not contraindicate operation. The degree of unconsciousness is not in all cases proportionate to the severity of the injury.

4. The duration of unconsciousness is important, and when it lasts more than twenty-four hours—no other cause than the injury being present, operation should be considered.

5. Marked rise of temperature after uncomplicated head injury suggests serious injury to the brain. It is not necessarily an indication for operation. A subnormal temperature without other symptoms has no special significance. When accompanied by unconsciousness and lasting twenty four hours or more it suggests edema of the brain or intracranial hemorrhage.

6. Severe pain in the head continuing for some time after a head injury, if organic; indicates operation. Pain in the head following injury may, however, be functional and due to a general nervous condition.

7. Convulsions, when clonic and diffuse, suggest epilepsy or other complications. When localized they are of value as indicating the side of the brain on which the lesion producing them is situated. Taken in connection with other symptoms their presence usually favors operation.

8. The presence of paralysis of the limbs in adults, if marked

usually indicates immediate operation. Partial hemiplegias and paralysis of the limbs may occur in edema of the brain following injuries.

The above statements refer to adults only. In children, paralyses are more apt to pass away and the indication for operation is not so decided.

Burns and Their Treatment.

Dr. Yates, of Fayetteville, Ark., (*International Journal of Surgery*, August, 1902) reports a case of extensive burns. The following is a summary of his treatment:

1. The shock should be dealt with in the same manner as when due to traumatism.
2. When possible, asepsis should be secured and maintained.
3. All blebs should be opened and the detached epidermis cut away.
4. For purposes of ablution sterile normal salt solution or saturated boric acid solution is, perhaps, the best medium.
5. As a lubricant and emollient application for burned faces, I would use a mixture of castor oil, 94 per cent; balsam Peru, 5 per cent, and carbolic acid, 1 per cent. Olive oil may be substituted for the castor oil.
6. Next to the burned surface apply perforated rubber-dam, gut-tapercha tissue or oil silk, and cover over with sterile gauze and retention bandages.

Gauze should never be applied directly to a granulating wound for the reason that the granulations grow into its meshes, thereby giving rise to both pain and bleeding upon its removal, as well as the destruction of delicate granulations.

PEDIATRICS.

In Charge of M. J. LIPPE, M.D.

The Positive Diagnosis of Meningitis, Particularly Tuberculous, by Means of Lumbar Puncture.

Hand (*Philadelphia Medical Journal*, August 9, 1902) gives the result of his studies in a large number of cases, and concludes that when meningitis is suspected lumbar puncture will definitely determine

whether or not it exists, and that if proper technic is observed, it can be told in a vast majority of cases whether the process is tuberculous or not.

The presence of sugar in the cerebrospinal fluid, when other signs show meningitis, is suggestive of tuberculosis.

The normal amount of albumin in cerebrospinal fluid varies from 0.5 to 1.9 per cent, by bulk, while ordinary meningitis gives 4 or 5 per cent, and tuberculosis often runs as high as 9 per cent, one specimen having contained 16 per cent.

The polynuclear leukocytes are in excess in ordinary meningitis, the lymphocytes in tuberculous meningitis.

The bacteria found in the fluid were the tubercle bacilli, the pneumococcus, unidentified cocci, and an intracellular diplococcus, probably the meningococcus, which did not grow on blood serum or agar.

The author states it as his belief that with the technic he describes tubercle bacilli will be found in at least 96 per cent of tuberculous cases on the first examination.

Technic.—The fluid should be allowed to drop from the needle into a sterile test tube, which is then stopped with cotton and allowed to stand until a strand of fibrin has formed; this occurs in from one to six hours, and it either settles to the bottom or reaches from the top of the fluid down to the bottom, spreading out in a fan-shaped delicate film; a straight platinum needle, not a loop, is touched to one edge of the fibrin, the adhesion being very firm, the fibrin is then transferred to a slide, care being taken to tip the test-tube so that the fibrin constantly floats in the liquid. A few drops of the liquid are to be poured with the fibrin on the slide, for, if the fibrin emerges for but an instant from the fluid, it will either roll up into a cord, through which nothing can be seen, or it will wrap itself so tightly around the platinum needle that it can not be detached; to prevent this the edge of the tube should be flanged and not straight. When once on the slide and floating in the fluid it can be carefully separated from the tip of the platinum needle with the help of an ordinary needle or pin; the excess of fluid is drained off from the slide and the remainder is evaporated by gentle heat, it being not only unnecessary but usually fatal to the success of the examination to press the fibrin between two slides; the fibrin is fixed by heat and strained in the usual manner, and then carefully gone over with a mechanical stage.

The next step is the taking of cultures. If tubercle bacilli have been found, inoculation into guinea-pigs will not be necessary.

The non-tuberculous cases did not show the fibrin formation in anything like the degree that the tuberculous did.

Pneumonia in Young Children.

Weill (*Medical Record*, July, 1902) gives the following method of diagnostinating pneumonia from other diseases :

On placing the fingers upon the subclavicular region they are lifted as by a wave on the sound side, while on the other the lack of expansion is evident even in the early stages of the disease.

Erythematous Rashes Simulating the Acute Exanthemata.

Winfield (*Brooklyn Medical Journal*, August, 1902). The diseased condition termed erythema scarlatinoides or scarlatiniformis may be acute or subacute, and is secondary to some infectious disease—such as diphtheria, typhoid or malarial fever, the result of autoinfection, toxemia from food or drugs, or as a sequel of surgical operations, especially laryngological.

The symptoms of the acute form are, in many respects, similar to those of the exanthemata. The rash is generally preceded by slight constitutional disturbance, but the eruption may also appear suddenly.

It appears first on the chest and back the face usually remains free. The color varies from the bright scarlet of scarlet fever to the purplish red of measles. It is either punctiform, macular or diffuse. On the third or fourth day the skin desquamates in furfuraceous scales. Scaling in large flakes may occur.

The throat and tongue may be red, and though the tongue may desquamate it never presents the strawberry appearance of scarlet fever.

In the subacute variety (dermatitis scarlatinoides recidivous) the symptoms are the same as in the acute, except that the eruption tends to recur from time to time.

BOOK REVIEWS.

Diseases of Infancy and Childhood. By Henry Koplik, M.D., attending physician to the Mount Sinai Hospital; formerly attending physician to the Good Samaritan Dispensary, New York; ex-president of the American Pediatric Society, etc. Illustrated with 169 engravings and 30 plates in color and monochrome. Price, \$5. Lea Brothers & Co., New York and Philadelphia. 1902.

In this work the author aims to "unify the world's best pediatric practice in a systematic and convenient volume." The American, English, French and Italian pediatric science is represented, but the work is, in no sense, a compilation. At the end of each chapter is found a list of the literature consulted or quoted.

In its present state this volume will not be a complete text book, but, nevertheless, is a valuable addition to pediatric literature. The style of the author is too abrupt; another deficiency is a lack of therapeutic directions. The chapter on artificial feeding is too short. The chapter on exanthemata is well written; the description and illustrations of the "Koplik" spots of measles are most excellent.

The author makes use of the term enanthem to describe the eruption on the mucous membrane. Due stress is placed upon the value of the Widal reaction of the blood and the diazo reaction of the urine in typhoid fever. Glandular fever is described, but the author says nothing of his own experience or opinion of this disease.

The treatment of catarrhal laryngitis as outlined is too brief for the general practitioner, who must have more than one or two drugs to subdue this terror of mother and child. Atropin and opium are discountenanced by the author in cholera infantum and other diarrheal diseases, rather from a personal standpoint than from the experience from the profession at large. The chapter on intestinal parasites might be enlarged to the betterment of the book.

Lumbar puncture as an aid to diagnosis receives due credit and is one of the particularly good chapters. The one page description and treatment of enuresis will not be sufficient either for students or practitioners.

The only typographical error discovered occurs on page 238, where "nasul" appears instead of "nasal."

As an addition to pediatric literature this book is of much value, but as a unification of the world's best pediatric practice it falls short.

Practical Diagnosis: The Use of Symptoms and Physical Signs in the Diagnosis of Disease. Fifth edition, revised and enlarged. By Hobart Amory Hare, M.D., B.Sc., professor of therapeutics in the Jefferson Medical College, of Philadelphia, etc. Illustrated with 236 engravings and 25 plates. Lea Brothers & Co., Philadelphia. 1902.

This book has received a very cordial reception among the medical profession, and the appearance of the fifth edition in six years speaks more than words. Dr. Hare is eminently practical, he appreciates the needs of the general practitioner; and in presenting the symptoms as met at the bedside, and discussing disease as it actually appears, he has no peer.

The new edition has been carefully revised, much has been re-written and many fine illustrations have been added. It is astonishing how much can be learned by studying the extremities. One hundred pages are devoted to the study of the symptoms as expressed by the upper and lower extremities.

The scope of the present edition has been widened to include not only symptoms but also physical signs and clinical tests. This makes the treatise a complete guide for the purposes of diagnosis. The chemical and microscopical examination of the blood is described in detail. We are glad to see Tallquist's color scale for estimating hemoglobin occupying a full page plate. The practitioner, with a piece of pure white bibulous paper can make a rough estimate of hemoglobin, without purchasing a costly apparatus, which he can not take time to use correctly. Directions as to urinary diagnosis are concise and complete.

The work is divided into two parts: The first of which deals with manifestations of disease in organs, that is, discusses the significance of local symptoms; part two treats of the manifestation of disease by symptoms. In this part general symptoms, such as chills, fever, coma, convulsions, etc., are carefully described and their pathological significance discussed.

The work, no doubt, will continue to grow in popularity.

Diseases of the Stomach: Their Special Pathology, Diagnosis and Treatment, with sections on Anatomy, Physiology, Chemical and Microscopical Examination of the Stomach Contents, Diabetics, Surgery of the Stomach, etc. By John C. Hemmeter, M.D., Ph.D., professor in the Medical Department of the University of Maryland, Baltimore; consultant to the University Hospital and director of the Clinical Laboratory; author of "A Treatise on Diseases of the Intestines," etc. With many original illustrations, a number of which are in colors and a lithograph frontispiece. Third enlarged and revised edition, 894 pages. Price, cloth, \$6, net. P. Blakiston's Son & Co, Philadelphia. 1902.

This is undoubtedly an American masterpiece. The first edition was exhausted in a little over one year. The whole book has been gone over critically and about two-thirds of it has been totally reconstructed. It is the most complete treatise on diseases of the stomach with which we are acquainted. The work excels particularly in the clear exposition of diagnostic procedures and the full discussion of dietetics as applicable in the treatment of gastric diseases. So also, great interest will be found in the sections which critically analyze the action of drugs. He thinks pepsin is prescribed much too often, and personally he has ceased using it. He asserts that pancreatin is destroyed in the stomach and its administration useless.

Chapter seven contains a highly instructive article on the surgical treatment of organic gastric disease. It discusses the indications and results of various operative procedures without giving the surgical technic.

The influence of gastric diseases upon other organs and on metabolism receives attention. Interesting sections are gastric vertigo, tetany, asthma dyspepticum.

Part third deals with the diseases of the stomach. The author's classification is simple and rational, and does not smack of that extraordinary activity exhibited by some gastrologists in applying a new name to every gastric symptom. It must be acknowledged, however, that the diseases of the stomach have increased in number as a result of the researches of the last decade. In Flint's time the diseases of the stomach were all classified under four or five names, now it takes a score to designate the different affections.

The author has studied the subject not only from his own experience, but has thoroughly gone over the literature. An extensive bib-

liography is appended to each chapter, which makes the book valuable to the investigator.

For the general practitioner and the specialist there is no better work on diseases of the stomach.

A Text-Book of Embryology for Students of Medicine. By John

Clement Heisler, M.D., professor of anatomy in the Medico-Chirurgical College, Philadelphia. With 190 illustrations, 26 of them in colors, 405 pages. Price, cloth, \$2.50, net. W. B. Saunders, Philadelphia. 1899.

Studies in embryology are not very popular among students of medicine. There is so much to learn and it has such little direct application in actual practice; hence it is generally a neglected study among practicing physicians, and the medical student learns as little as he can. The study entails the grasping of a large number of new names and concepts for which no adequate compensation is obtained. Yet it can not be denied that embryology has added enormously to the elucidation of problems both in physiology and pathology, besides forming the whole basis of biology.

But the scientific physician must be acquainted with the essentials of this science; it pays him to review the subject occasionally; he will think clearer on many common conditions.

We know of no better exposition of the subject than is contained in this volume. It makes interesting reading. To the student it offers a very clear description; the order of classification is such that it can be readily mastered, and the numerous illustrations serve to simplify the study. The subject is treated completely and yet not at such a length as to be tiresome. The appended tabulated chronology of development will be very useful for reference.

Diseases of the Rectum and Anus. Designed for Students and Practitioners of Medicine. By Samuel Goodwin Gant, M D., LL D., professor of rectal and anal surgery at the New York Post-graduate Medical School and Hospital; attending surgeon for rectal and anal diseases to the St. Mark's Hospital, Hebrew Sheltering Guardian Orphan Asylum, and New York Infant Asylum; member of the American Proctologic Society, etc. Second edition, rewritten and enlarged, with 37 full-page plates, 20 of which are in colors, and 212 smaller engravings and halftones. Royal octo-

tavo, xxiv-687 pages. Price, extra cloth, \$5; sheep or half-russia, \$6, net, delivered. F. A. Davis Company, Philadelphia.

The present volume is practically a new work, since so many chapters have been rewritten and so many additional illustrations have been inserted. These illustrations are fine. The book is composed of heavy paper, is well bound and makes an attractive appearance.

The progress in this specialty has kept pace with that of other departments in new diseases and new diagnostic methods. The rings and bands described by various authors and all are grouped under the term Houston's Valves. A fine full-page plate demonstrates very nicely the indentations made by these valves in a paraffin cast. We can hardly conceive it necessary in a work of this kind to enter at length into a discussion of autoinfection and autointoxication. The subject is still undecided.

Special stress is laid in all sections on the differential diagnosis, but some of the parallel columns are unduly long.

Both medical and surgical treatment receives due consideration.

We believe this is the best work on rectal and anal diseases for students and practitioners and we heartily recommend it.

The Practical Medicine Series of Year Books, Comprising ten volumes on the year's progress in medicine and surgery, issued monthly. Under the general editorial charge of Gustavus P. Head, M.D., professor of laryngology and rhinology, Chicago Post-Graduate Medical School. The Year Book Publishers, 40 Dearborn street, Chicago. Price, for the Series, \$7.50.

Volume VIII.—Pediatrics and Orthopedic Surgery.

The pediatric literature has been culled by Dr. W. S. Christopher with the aid of Dr. Samuel J. Walker, and the best portions abstracted into this volume. Dr. John Ridlon has done the same for the orthopedic branch.

This little volume gives the practitioner a clear view of the status of these two branches of medicine up to date, without the necessity of reading through a great mass of literature on these subjects.

Volume IX—Pathology, Bacteriology, Anatomy Pathology edited by W. A. Evans, M.S., M.D., professor of pathology, College of Physicians and Surgeons, Chicago. Bacteriology edited by Adolph Gehrmann, M.D., professor of bacteriology, Chicago. August, 1902. Price, \$1.25.

Section One on physiology contains a very concise résumé on the antibodies of the human blood, and is thereby justly given a place among the normal bodily functions. Whoever has not a clear idea of antitoxins, precipitins, agglutinins, lysins and cytotoxins should read this section. But physiology has been enriched by other discoveries which this volume does not give.

Section Two contains abstracts of the principal articles on pathology that have appeared in the last year.

Section Three reviews the progress in bacteriology, section Four treats of hygiene, and section Five gives abstracts of recent articles on anatomy.

Fifteenth Annual Report of the Board of Health of the State of Ohio, for the year ending October 31, 1900. Fred. J. Heer, State printer, Columbus, Ohio.

Of general interest, besides the mortuary statistics, is the report of the chemical and bacteriological examinations of the waters of the Little Miami River and the Great Miami River, with their tributaries, by E G. Horton, B.S.

Diseases of the Eye. A Hand-book of Ophthalmic Practice for Students and practitioners. By G. E. deSchweinitz, A.M., M.D., professor of ophthalmology in the Jefferson Medical College; professor of diseases of the eye in the Philadelphia Polyclinic; ophthalmic surgeon to the Philadelphia Hospital; ophthalmologist to the Orthopedic Hospital and Infirmary for Nervous Diseases. With 255 illustrations and 2 chromolithographic plates. Third edition, thoroughly revised. W. B. Saunders, Philadelphia.

Death of Rudolph Virchow.—Professor Rudolph Virchow died in Berlin on September 5, 1902. He is generally considered the father of modern scientific research in medicine. Virchow was born October 13, 1821, and graduated in 1843. His father was a farmer.

He was the founder of the theory of cellular pathology, upon which modern pathology rests; he accomplished all by persistent effort and tireless energy.

His labors embraced other fields than medicine; in biology, sociology and politics he was considered a powerful moving force.

NOTES AND ITEMS.

Exhibit in Medicine and Surgery at the Universal Exposition in St. Louis, 1904—Physicians will be interested in the department of liberal arts at the St. Louis Universal Exposition as it is to contain the exhibit on medicine and surgery. The Liberal Arts Palace will be built of staff and is estimated to cost \$500,000. The style of architecture is a severe treatment of the French Renaissance for the exterior facades.

The exhibits cover a wide field. They include in general, typography, photography, books and publication, maps and apparatus; instruments of precision, etc., but we are especially interested in group 20, to which is assigned medicine and surgery. The classes in this group are as follows:

Class 74. Appliances, instruments and apparatus for work in anatomy, histology and bacteriology; anatomical models, normal and pathological, histological and bacteriological preparations.

Class 75. Apparatus for sterilizing instruments and appliances for dressing wounds.

Class 76. Instruments for general and special medical research.

Class 77. Instruments and apparatus for general, special and local surgery.

Class 78. Appliances for dressing wounds.

Class 79. Apparatus for plastic and mechanical prosthesis; orthopedic apparatus; apparatus for hernia; apparatus for medical gymnastics; material, instruments and apparatus for special therapeutics.

Class 80. Instruments and apparatus used in the practice of dentistry.

Class 81. Appliances for the use of the infirm, of invalids, and of lunatics; artificial limbs.

Class 82. Chests and cases of instruments and medicines for the use of surgeons of the army and navy; appliances for rendering aid to the wounded on the field of battle; appliances for rendering aid in case of accident; ambulance service, etc.

Class 83. Appliances for rendering aid to persons apparently drowned or asphyxiated.

Class 84. Instruments and appliances for veterinary surgery.

Mechanical Devices in Medicine and Surgery.—The great developments in what may be termed the mechanical side of medicine and surgery will bring into this group a very large collection of instruments and appliances used in this important field of human endeavor.

The prevention and mitigation of the ills which beset mankind, calls for the exercise of the highest form of human skill, guided by the highest type of intelligence, reinforced by experience

Recent Discoveries of Great Benefit.—The discoveries of Pasteur, Koch, and other masters in the field of modern medical research, have been of incalculable benefit to their fellow men, and the appurtenances necessary to fully illustrate the application of their methods should find a prominent place in this group.

Moscow Exposition a Model.—In some of the great expositions of the past, medical science has received considerable attention, but especially so at the Moscow Exposition of 1872. Here there were three model hospitals, in addition to the military hospitals. There were also dispensaries, pharmacies, gardens in which were grown a large variety of medicinal plants, surgical instruments of great variety, everything pertaining to dentistry, the treatment of natural teeth and the manufacture of artificial ones. This exhibit was conceived to be of a very great educational value to the members of the medical and surgical professions, and through them it contributed largely to the welfare of mankind.

Great Modern Developments Demand Elaborate Display.—The wonderful developments in medicine and surgery that have been made since 1872, make it doubly certain that a collection of exhibits, such as is called for in Group 20, would be of much greater value to the human family than any previous exhibit of a similar character.

Substantial Support Expected.—The hearty support of the medical fraternity and the manufacturers of medical and surgical appurtenances and appliances is, therefore, confidently looked for.

No Important Feature Should be Omitted.—This very important group should be filled with specimens of all kinds of instruments and appliances which pertain to medicine, surgery and dental work.

Anatomical models, diagnostic apparatus, hospital appliances, marine hospital service, quarantine stations, with their fumigating, sterilizing and other devices, etc., should be fully represented.

ST. LOUIS

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No. 5.

ORIGINAL CONTRIBUTIONS.

The X-Rays as a Therapeutic Agent.

By A. V. L. BROKAW, M.D.,

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WASHINGTON UNIVERSITY; SURGEON-IN-CHIEF, ST. JOHN'S HOSPITAL.

SINCE 1896 I have been using the new radiation for diagnostic purposes, and for the past year and longer have been using the x-ray therapeutically. The results obtained have been, in the majority of cases, gratifying, the only disappointments met have been when too much has been expected. While the possibilities of this powerful agent are great and the sphere of usefulness well established, the method has its limits. Cases will be constantly met in which no curative reaction will obtain. It is best not to promise your patient or yourselves too much, especially in the advanced cases—the cases past all surgery.

Optimistic writers and x-ray enthusiasts have exaggerated the potency of the agency, thereby leading the profession and the public to expect at the present the impossible. There are constantly going on manifold improvements in apparatus, es-



FIG. 2.

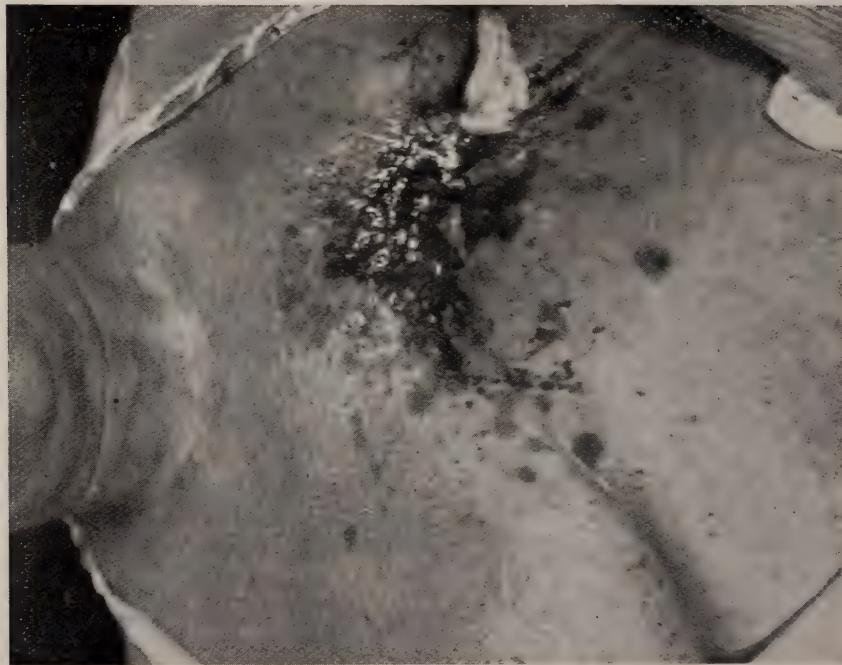


FIG. 1.



FIG. 4.



FIG. 3.



FIG. 5.



FIG. 6.

pecially in the tubes. We can, therefore, look forward to greater achievements in the treatment of malignant and other diseases by the x-ray.

I believe as a therapeutic agent the new radiation is in its infancy. Much will develop as the technic of application is perfected. The improvement in apparatus is well illustrated in the progress that has been made in radiographic work. In

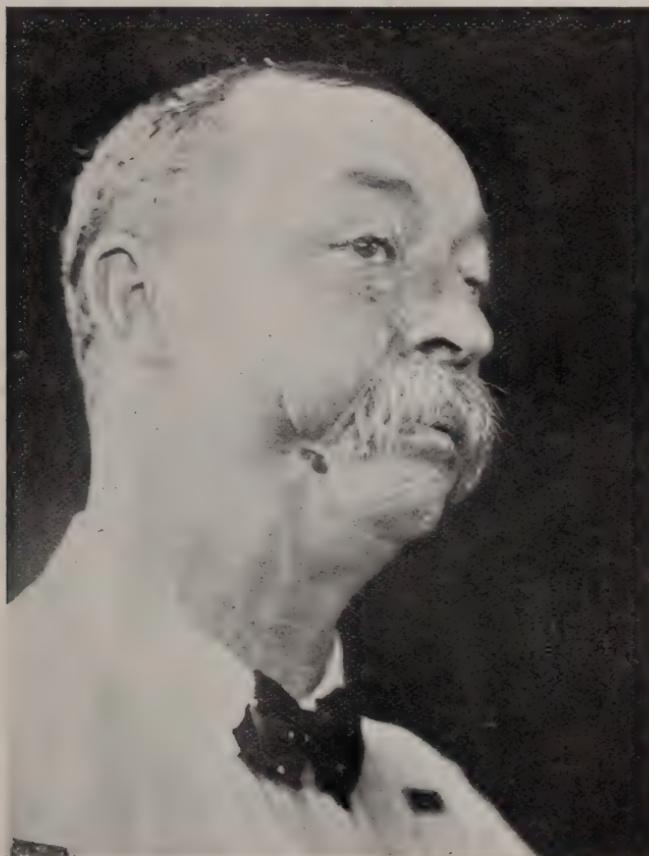


FIG. 7.

1896 I made fair radiograms of the adult hip in from fifteen to thirty minutes; to-day, the time of exposure has been so reduced that I recently made a good radiograph of an adult hip in one minute and thirty seconds. With greater experience results have been obtained that border upon the miraculous. In certain cases under observation where surgical intervention

was out of the question—not to be considered, the x-rays have been applied empirically and these small cases have been not only benefitted but cured. The illustrations presented show fairly well the changes wrought by the x rays in several types of cases in which this treatment was carried out.

The Figs. 1, 2, 3 and 4, of the case of cancer, both breasts, a so called cancer *en cuirasse*, illustrates what was accom-



FIG. 8.

plished in a seemingly hopeless case. A large painful ulcer, foul-smelling and bathed in bloody ichorous pus, was present. The ulcer was about eight inches long and five inches wide. The anterior wall of the thorax was studded with typical cancer nodules. After thirty-three x-ray exposures the ulcer is now practically healed, all the nodules having disappeared. A

small spot, less than the size of a dime, now remains at the site of ulceration. There has been complete relief from pain and marked improvement in this patient's health.

The Figs. 5, 6, 7 and 8, the case referred to me by Dr. Gettys, show the transitional stages developed in an infiltrating carcinoma of the cheek and inferior maxilla that was not con-



FIG. 9.

sidered favorable for operation. In fact, a surgical operation if performed, would have been a surgical exercise.

The Figs. 9 and 10, of the case of rodent ulcer is of interest. This patient was irradiated eleven times at intervals of three and four days, then ceased his visits as a dermatitis set in suddenly, accompanied with severe headache. With the re-

crudescence of the reaction the ulcer rapidly healed and the patient is now well.

The case of lupus of the forehead has been subjected to various treatments and numerous operations in the past ten years, but with no improvement; on the contrary it was gradually spreading. The series of Figs. 11, 12, 13 and 14, speaks better than any description that might be given of the progress

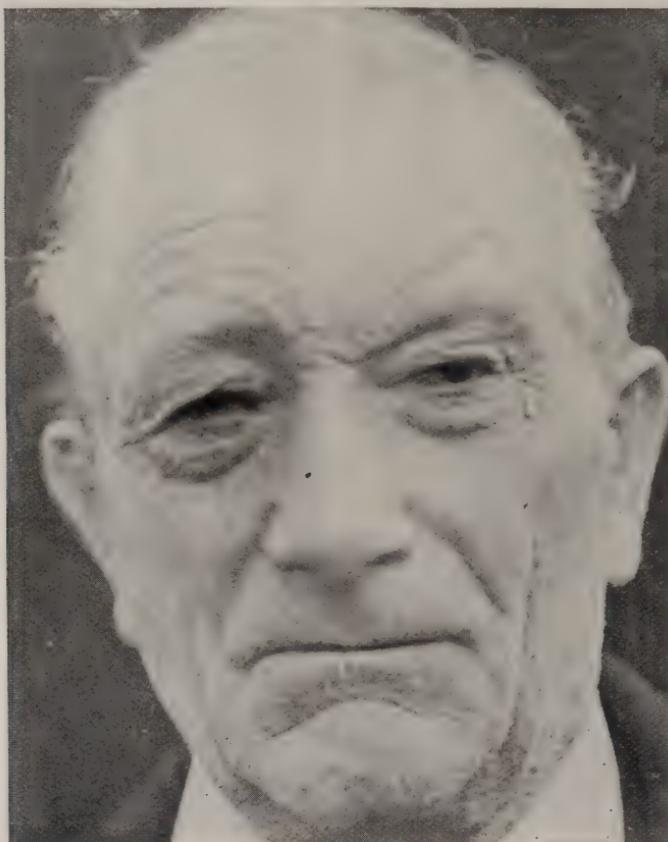


FIG. 10.

toward recovery, which is now complete. The cure was effected by fourteen exposures to the x-rays. Four months after the discharge, the site of the original lesion is not discernible.

The lupus of the cheek of many years' duration is about well. The Figs. 15, 16 and 17, show with a fair degree of

distinctness the progress toward recovery in this case. The patient was referred to me for x-radiation by Dr. Gettys.

Figs. 18 and 19, a small epithelioma of the nose, was cured by eleven treatments. The skin is perfectly normal, hardly any scar being present. The patient was referred to me for x-radiation by Dr. Louis Hauck.



FIG. II.

Numerous other cases might be detailed, but it is far from my purpose to monopolize the time of this Association. To those who contemplate taking up this work, a few points gathered from a six years' experience in x-ray work may not be without interest. The subject can not be mastered in three days or three months. The best results will only be obtained after much study and experimental research. Secure the most

efficient apparatus obtainable and be absolute master of the details of management of the tube and the generator of the x-rays. This is essential if disappointment is to be avoided. A retrospective view of the x-ray development shows a path strewn with broken down apparatus, tubes, coils, and static machines of every description, all bearing the ear marks of inefficiency. Be sure of the standard of excellency of an apparatus before purchasing an outfit.



FIG. 12.

In radiographic work, when great penetration is necessary, as in brain, hip, thorax and spinal work, high tubes are necessary. To energize such tubes the most powerful coils, capable of generating sparks eighteen to twenty inches, find most favor with me. To accomplish much in inoperable visceral malignant growths the most powerful apparatus obtainable

would seem to be preferable, judging from my experience with such cases. This experience is being reserved for a future paper, when the investigations being made are complete. At this time I believe the x-rays are indicated and it will probably soon be generally recognized as a proper procedure to subject all inoperable cases to the rays, not in a haphazard manner, but with the tube carefully adjusted to the particular case. I



FIG. 13.

am convinced that it is good practice to subject patients to x-rays after all operations for cancer, as a prophylactic measure, and I advocate this procedure especially in every mammary cancer.

In exterior growths a change for the better was noted as soon as the x-ray reaction was brought about. You are cau-



FIG. 15.



FIG. 14.



FIG. 17.



FIG. 16.

tioned by some writers on this subject not to set up a dermatitis. I endeavor to bring this condition about as soon as possible, but always tan the parts before I actually attack the growth with a hard tube, if the use of such a tube is thought to be indicated. To avoid unfortunate results, white gangrene, etc., one must proceed with caution. An idiosyncrasy of the



FIG. 18.

individual to the x-rays is not to be lost sight of. I have noticed a susceptibility to the rays in chronic rheumatism, elderly subjects with faulty vascular conditions, such as senile changes, and certain alcoholics. A single application of ten or twelve minutes, the tube six or eight inches from the body surface, may set up a dermatitis in one individual, and a dozen

applications under the same circumstances may give but little evidence of irradiation further than a slight tanning in another. The practice of using a high tube from time to time often hastens and brings about curative effects in a most rapid and satisfactory manner.

The dictum of some authorities to always use low vacuum tubes, I do not adhere to, as suggested above. The continued



FIG. 19.

use of low vacuum tubes prolongs the treatment, making it necessary to give a great number of treatments, often taking months to accomplish a desired result, when by careful application of a high tube, from time to time, the same, and even better results would be obtained in a few weeks. The personal equation of the operator is important in the use of high

tubes. In growths of considerable area it is well to direct the rays to the periphery. Personal experience is conclusive that healing commences at the periphery most actively, and not centrally as claimed by some operators.

No hard and fast rules can be laid down as to the length of the exposure and the distance of the tube from the body surface. The treatment of each case is a law unto itself.

For the present the x-ray treatment of internal visceral growths is in the experimental stage. The treatment of surface or external malignant processes has rapidly emerged from the experimental stage, and in all early stages of external epitheliomas, carcinomas, rodent ulcers, and cases of lupus, a cure may confidently be expected.

[536 NORTH TAYLOR AV.]

Gynecologic Diseases Without Local Symptoms.

By GEORGE GELLHORN, M.D.,

ST. LOUIS, MO.

DURING the last five or six years the question whether diseases of the female genital organs are liable to produce disturbances in other distant organs has led to lively discussions. I consider this question to be of far-reaching importance to the gynecologist and neurologist as well as to the general practitioner, and shall endeavor to briefly outline what opinions are at present held in this matter.

Relations of gynecologic affections to disturbances in other distant organs may readily be divided into two categories. The first and smaller class finds its explanation in the disturbed mechanics of the pelvic and abdominal visera, and its causes and effects are so clear that there is hardly room for any marked difference of views. The second category embraces the large field of the so-called "reflex-neuroses." These cases have aroused an outspoken dissensus of opinion, and have produced an extraordinarily voluminous literature, published by both neurologists and gynecologists.^{1—4}.

One of the main themes of the meeting of the American Medical Association in Denver, June, 1898, was a discussion of the relation of pelvic disease to nervous and mental affections. This discussion, however, did not result in an agreement. On the contrary, the conclusions as drawn by the speakers led to wide divergences. Three neurologists (Peterson,⁵ Dercum,⁶ Moyer⁷) strictly denied any and every causal connection between disorders of the sexual organs and those of the nervous system, and the favorable effect of gynecological treatment in these cases; while three gynecologists (Dunn,⁸ Eastman,⁹ Humiston¹⁰) emphasized that such a relationship exists. Windscheid,¹¹ in 1897, in his well-known monograph, concedes that at least in some cases a neurosis may originate from the genitalia; but in his latest writings assumes an absolutely adverse position.¹² At the same time we almost daily read of cases in which operations upon the genital organs have been performed by gynecologists for the most varied nervous and psychic ailments and with wonderful success, as they claim.

From this chaos what conclusions must be deduced?

I submit that it would be well, when endeavoring to estimate such questions, to abandon the onesided view-point characterized by looking at all ailments only from within the narrow field of vision of the respective specialist and consider one's own specialty the center of universal gravitation. As in most instances, truth is to be found well between the two extremes, rather demanding of us the considerate treatment not only of a diseased organ but of the diseased organism.

In the following statements I entirely omit all reference to psychoses, save hysteria, since I possess no psychiatric knowledge which would enable me to lay down an opinion bearing upon this problem. I desire merely to discuss how neurasthenia and hysteria are connected with gynecological affections. In my judgment this connection can be based upon the following three possibilities:

1. Either neurasthenia or hysteria may be primary affections and may already have been placed in evidence, when a local trouble sets in. The symptoms of the latter will exert a cumulative influence upon the manifestations of the primary neurosis. Therefore, gynecologic treatment may relieve the symptoms, but will not suffice to cure the patient.

2. A patient with a nervous predisposition. If now an

additional gynecologic disease sets in, it will act as an accidental cause (as *agent provocateur* of the French) and will bring the so far latent neurasthenia or hysteria into evidence.

3. The gynecologic disease is primary and directly produces a neurosis.

Among these possibilities the second will be found most frequently observed, viz., that in cases of a nervous predisposition under the influence of an additional gynecologic disease a well-pronounced neurasthenia or hysteria will develop. This nervous predisposition, as is well known, is of the widest possible distribution and is assumed to indicate a state of labile equilibrium of the nervous system which may be either congenital or acquired, the latter being the most frequent. The condition of latency may remain undisturbed throughout life. But in by far the largest group an accidental cause may unexpectedly unroll the whole picture. It is by no means necessarily a sexual disorder which will summon the slumbering demons. But it must be conceded that the genital system exerts a far more potent influence upon the feminine than the male mind. It is only upon this basis that it can be understood why a woman with a nervous predisposition will localize her complaints exclusively in her sexual organs so soon as her attention is directed to this portion of her economy, whether by the symptoms proper of the gynecologic disturbance or by an ill-advised exertion of influence from other quarters. This, then, suggests the proper mode of therapeusis. In addition to a general treatment we are obliged to treat locally. In good faith, why should an hysterical patient be denied the advantages of proper treatment, *e.g.*, for dysmenorrhea caused by endometritis or a prolapsed ovary? Only because she is hysterical? "Hysterical" is no longer, as it formerly was, synonymous with "disagreeable" and "cranky" (as regards the patient) or "unintelligible" (as regards the disease, or rather the diagnostic ability of the physician). To-day hysteria is a well-defined disease, the scientific characteristics of which have been first described by Charcot and his school. The symptoms as outlined by him have been augmented at many important points during recent years by Lomer,¹³ Windscheid,¹¹ Landau, Jolly and others. It is utterly impossible that the patient will react to an antihysterical treatment so long as the visible and objective symptoms of the sexual disorder have not been successfully treated.

But even when the sexual complaints are largely imaginary, local treatment may, under certain circumstances, bring hysteria back to latency, since, in my judgment, hysteria is an incurable affection. I am willing to concede that such an effect would be merely suggestive. But if suggestion employed in this manner proves serviceable it deserves to be employed in this manner. This form of suggestion is by no means polypragmasia. I deprecate polypragmasia. This, and indiscrimination are only too often associated, and those guilty of these faults are they who place greater value upon treatment than upon an exact diagnosis. It is by no means necessary to act polypragmatically if one strives to cure objectively; of course, a certain space of time ought to be conceded for gynecological treatment as for every other branch of therapeusis. I am of the opinion, generally speaking, that any local treatment, if continued without the slightest benefit to the patient for about three weeks, is altogether valueless. If, after this time, some improvement can be observed it is justifiable to continue the treatment. On the other hand, if one only wishes to act by suggestion, a very limited number of local treatments is sufficient.

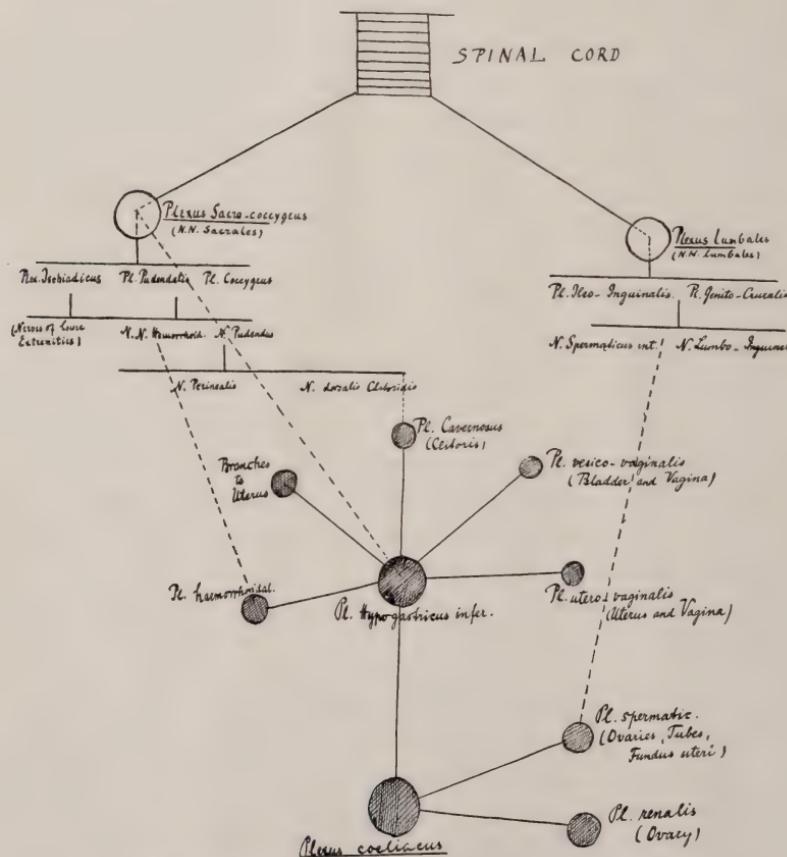
The third class in the relation between sexual disorders and neuroses embraces the nervous disturbances directly produced by gynecologic diseases. In this group we have not to deal with women hysterical or neurasthenic from the beginning. We frequently are able to clearly demonstrate the causal relationship; and it is manifestly due to improved gynecologic diagnosis that we are thus enabled to designate a local disorder as an etiologic factor in nervous disturbances which would otherwise be wholly unintelligible. In these cases we may expect that direct anatomic connections exist between genital and nervous systems and, in fact, these are at hand. Such nerve-tracts have been found between a goodly number of the organs, though not among the entire list. We are justified in anticipating that further investigations in this field will furnish tangible evidence that similar nerve-tracts exist here also.

In the following I shall limit myself principally to demonstrating that gynecological diseases may occur without any local symptoms. I have suggested above that there is an intimate anatomic connection between the female genitalia and the nervous system. As these interrelations between both systems mostly display themselves by way of the nerves I

shall first give a very short synopsis of those nerves which stand in special relation to the female genital organs.

The female external genitals are supplied by both spinal and sympathetic nerves. The internal genitals—uterus, ovaries and tubes, are supplied by the sympathetic alone. These two systems have intimate interconnections with one another. The accompanying diagram (Fig. I), which I copy from Wind-

I.



The dotted lines indicate the combinations.

scheid's above-cited monograph, will show the communication between the spinal and sympathetic nerves without further elaboration.

From this description it is also readily understood why, in

a large number of gynecologic diseases, there are certain remote disturbances to be found, not only in hysterical and neurasthenic patients but also in otherwise perfectly healthy women. Among these remote disturbances which appear with marked regularity, cephalalgia and gastric symptoms are the most prominent. At any rate, the gynecologic disease is either accentuated or at least presents such marked local symptoms that the physician's attention is drawn to the genital organs.

The same gynecologic diseases may happen to exist in their primary stages, or even throughout life, without giving rise to any *local* symptoms; the symptoms they produce may only be felt in far distant organs. Cases of this kind are not so very frequent: yet, it is clear that if we bear this fact in mind we shall acquire an exceedingly valuable assistance in so far as diagnosis and adequate treatment are concerned. Why one and the same gynecologic disease produces at one time pronounced local *and* general symptoms, in another case only symptoms of the latter variety, we do not know. Neither do such nervous disturbances follow general rules, so that every disease may present itself in protean guise. I shall endeavor to illustrate this in several types of disease.

I must of necessity begin with the deviations of the uterus; for they, especially retroflexion, produce most frequently secondary nervous disturbances. No one will deny that retroflexion may exist in some cases without giving rise to any symptoms. But there is a minority of authors (Theilhaber, Salin, Jenkins, Krönig and Feuchtwanger, Heinricius, Grandin and others) who go so far as to absolutely deny the clinical importance of this condition, and even ascribe the symptoms of retroflexion to hysteria. In a paper published several months ago, I¹⁴ have protested against this extremely biased view and I am much pleased to note an energetic declaration by Zweifel,¹⁵ in a recent number of the *Centralblatt f. Gynäkologie*. Zweifel opposes Windscheid and terms the statement of the latter, that retroflexion is nearly always without symptoms, a "great and harmful exaggeration."

I resist the temptation to dwell upon this subject in detail and I think it superfluous to enumerate the local symptoms of retroflexion—they are well known.

Furthermore, there is an extended train of reflex symptoms the relation of which to the uterine disorder is well

marked. Yet, I will here speak only of those cases of genital reflex neurosis proper, in which there are no local manifestations. The most common reflex disturbances are in the gastro-intestinal tract. In some instances, to be sure, these disturbances may be only coincident complications, not in causal connection with the gynecologic trouble. In others, both gastric and gynecologic symptoms may be due to some general pathologic condition, *e.g.*, extreme relaxation of all bands and ligaments in the abdominal cavity may produce gastro- and enteroptosis and concomitantly malpositions of the uterus.

In the overwhelming majority of cases, however, the primary cause is discoverable in some disorders of the genital organs. Hildebrandt¹⁶ says: "In women with gastric trouble gynecologic examination should be made in every instance even if there are no symptoms of a genital disorder, since we knew how very often gastric disturbances are due to diseases of the uterus." This opinion has been sustained by other well-known authorities. In conformity with the views of Eisenhart,¹⁷ Tuszkai¹⁸ and others, I should like to add that this examination should be made, provided a rational dietetic and medicamentous treatment, continued for some time, has been ineffective.

The more ordinary symptoms are sensations of pressure in the gastric region, pain of varying severity (and usually independent of meal hours), nausea and vomiting. In some instances these symptoms may become alarming and are prone not only to deprive patients of the pleasure of existence but even to endanger life itself. Such a condition obtains when the patient suffers from persistent emesis, a condition, unfortunately, not uncommon. This, in its turn, leads to extreme emaciation and dangerously impairs the general vitality. Upon this basis further disorders and diseases which, in certain instances, have remained latent, may develop—such as paretic weakness and paraplegia of the lower extremities (Eisenhart¹⁷), edema (Leyden¹⁹), tuberculosis (Hewitt²⁰), mental irritability, psychic depression, even to genuine melancholia (Eisenhart).

Graily Hewitt²⁰ observed a girl, aged 27 years, who suffered from nausea and vomiting for nine years. In the beginning, vomiting only appeared during menstruation, but later also during the intermenstrual period. Finally, it occurred daily and invariably in the morning, after food-taking and after exercise. Gradually emaciation and progressive weakness re-

sulted. After several trials with dietetic and internal treatment, with failure, a gynecologic examination was made, and retroflexion of the uterus was found. Replacement of the uterus, combined with adequate general treatment, checked the vomiting instantly and restored the patient quickly to perfect health.

Of similar cases in literature, such as have been reported by Kisch²¹ and Panecki,²² I will mention only the interesting case recorded by Eisenhart.¹⁷ A woman, aged 42 years, had suffered for months from gastric pains and constant vomiting, so that the patient became exceedingly emaciated and grew so weak that she seemed "near extinction." Besides, she had almost continuous cardiac palpitations, but nothing abnormal in the genital sphere, save copious menstruation. Examination showed a precordial area not enlarged, heart sounds normal, right floating kidney, uterus enlarged, retroflexed and mobile. Since several examinations in the internal clinic had demonstrated the absence of any organic lesion of the stomach, the gastric symptoms could readily be assigned either to the mobility of the right kidney or to the deviation of the uterus. Therefore Eisenhart brought the kidney into its normal place, retained it by bandaging and put the patient in bed. No improvement followed. Then the uterus was replaced and a pessary applied. After this the gastric symptoms quickly subsided, vomiting did not reappear, the appetite became normal and the patient was able to again perform her domestic duties. Five weeks later she consulted her physician, complaining anew of the former gastric symptoms, which, as she claimed, had followed physical overexertion. Examination revealed the uterus again in retroflexion; after replacement and fixation of the uterus in its proper position, the gastric picture cleared up, never to reappear.

I myself have observed a case that belongs with this group. A married lady, aged 29 years, has had two partus, the second four years ago. Her present disease began two months after the last confinement, following a ride on horseback. Ever since she has suffered from anorexia and constant nausea. Otherwise she has felt perfectly well, in particular she never has had any trouble in the genital sphere, save some vaginal discharge which she considered to be normal. The family physician, after a course of methodic treatment covering several months, sent the patient to me for a gynecologic examination,

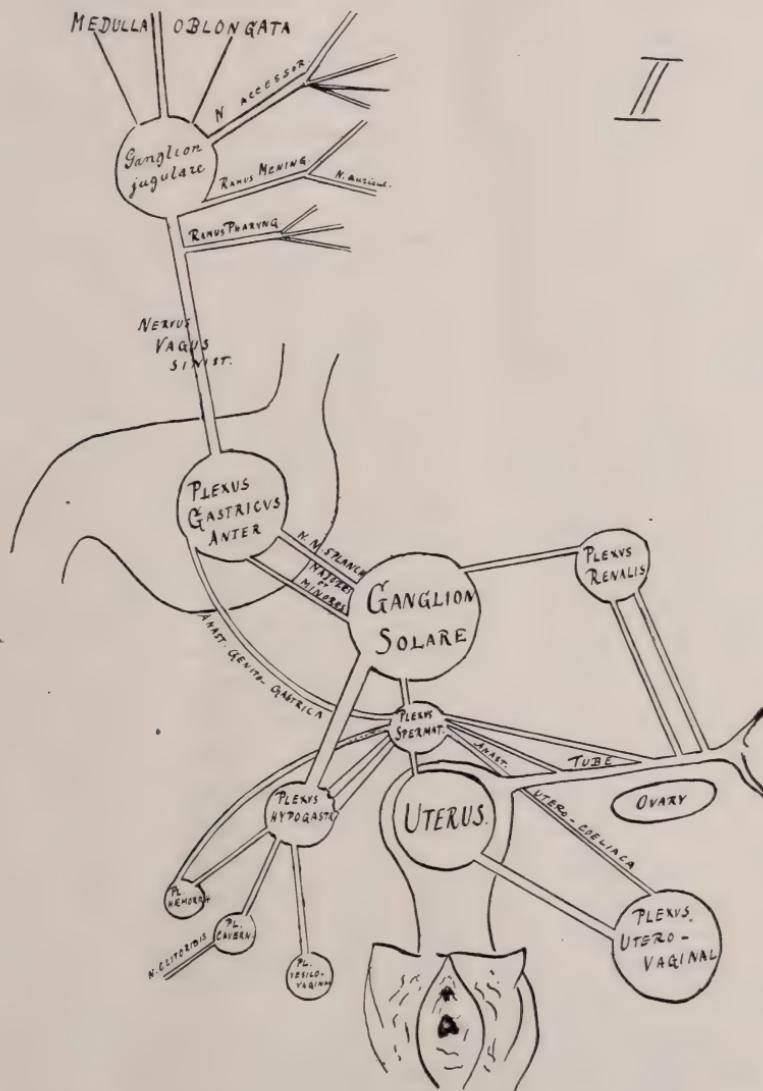
with a note, saying that there was no evidence of an organic gastric lesion. Upon examination, retroflexion of the uterus (partly fixed) was found, and an endometritis. For the latter a curetttement was made, the uterus was replaced under the same anesthesia and retained in position by an iodoform gauze tampon. Immediately the nausea disappeared, but returned the second day when the tampon was removed. Examination then revealed the uterus in retroflexion. Afterwards the uterus was repeatedly replaced, but though various pessaries were employed, a satisfactory anteversion was not accomplished. It was noted that every time following the reduction of the uterus and the insertion of a pessary the nausea disappeared for some time, but invariably returned; in all probability, whenever the uterus fell back into the malposition.

Finally some improvement took place, even when the uterus was in retroversion, but there was always some nausea existing. I submit the following explanation for this fact: By the repeated manipulations incidental to bringing the uterus in anteversion and to inserting pessaries, that the restraining adhesions had been stretched to such a degree that they did not pull on the uterus as before. After many futile trials with pessaries, an operation was suggested, but at this point the patient abandoned further treatment.

May I call your attention to one point common to the three cases mentioned. In each of them we have to deal with a genuine reflex-neurosis. No local symptoms aroused in the patient the suspicion of a genital disorder, nor had a gynecological examination ever been made. Not until all other therapeutic procedures had failed and an organic lesion of the stomach had been excluded with certainty, was the gynecologist consulted, who, upon examination, found in all three cases a pathologic condition of the uterus, viz., a deviation. Then gynecologic treatment was applied and cure, or at least, improvement of the gastric symptoms was effected, even without a concomitant treatment of the stomach itself. Would not grave injury have been inflicted upon these three patients if they had been looked upon simply as "hysterics," and had been denied proper treatment?

This influence of the uterus upon the stomach will be quite clear and intelligible when we learn from the elaborate investigations of Tuszkai¹⁸ that the uterine nerves which supply the posterior wall of the uterus and belong to the sym-

thetic system (plexus hypogastricus inferior, plexus spermaticus and plexus utero-vaginalis) are in direct connection with the stomach by means of the solar ganglion or plexus celiacus. In the stomach it is the plexus gastricus anterior which re-



ceives the uterine stimuli that have been transmitted by the solar ganglion. The plexus gastricus anterior is formed by the left nervus vagus, from the cervical portion of which the ramus meningens arises. Irritation of the latter produces vomiting. Fig. II, which is a fragmentary copy of one of Tusz-

kai's plates, illustrates the connection mentioned in a schematic fashion.

Among other remote symptoms of uterine deviation, with absence of local manifestations, are neuralgias. Odebrecht²³ describes such a case of neuralgia of the left nervus trigeminus, which almost entirely disappeared after a retroflexion of the uterus, unnoticed until then, had been treated.

In passing, disturbances of vision and diseases of the eye, originating from the same uterine deviation, are to be noted. The well known work by Mooren²⁴ contains several marked examples belonging to this class.

Disturbances of the voice, such as hoarseness and aphonia, have not infrequently been observed to follow genital disorders. F. A. Kehrer²⁵ reports several pronounced cases of this character connected with retroversion of the uterus. Of these cases of Kehrer I wish to present one somewhat in detail: A woman, aged 38 years, who complained in particular of an obstinate aphonia, had submitted to treatment of the most varied type, without success, during many years. Finally, a gynecologic examination was made and an uncomplicated retroversion of the uterus was found. After the uterus was replaced, a procedure easily done, and a pessary was applied, the patient instantly regained the ability to speak clearly and distinctly. When the pessary, for demonstration's sake, was taken out and the patient walked up and down for a few minutes, aphonia reappeared. This experiment was repeated frequently in various ways and with intentional deception of the patient, in so far as the application, the removal and the actual absence of the pessary were concerned. The result always remained the same: When the uterus was held in normal position by means of the pessary, the patient was able to speak loudly; when the uterus was in retroversion, she could only whisper. When the patient was finally discharged, wearing a pessary, she retained her voice.

We are unable to present an explanation for this phenomenon. But, to be sure, it is not justifiable to simply put off this question with the phrase, "hysteria," as Windscheid does; for here in Kehrer's case psychic influence could not be excluded with certainty.

In a number of cases of retroversion-flexion of the uterus recorded in literature, the deviation caused no other symptoms, save affections of the skin. Observations of this

kind have been published by Schauta and Pick,²⁶ Joseph,²⁷ Heitzmann,²⁸ Wienfield,²⁹⁻³⁰ Kaposi,³¹ and others.

Leaving this type of gynecologic affections, let us now consider uterine fibroids. The three main manifestations of fibromyomata are hemorrhage, pain and intra-abdominal encroachment, but there are cases, exclusively of subperitoneal fibromyomata, in which for many years such a neoplasm may be carried entirely unnoticed. An increase of the girth of the abdomen may, perhaps, be observed by some patients, but it is frequently considered to be without importance; and so it may happen that subserous fibromyomata, even up to the size of a man's head, may be accidentally found in patients who have consulted a physician for complaints which have no causal connection with the growth.

In regard to the question in hand, from these cases of uterine fibromyomata without symptomatology, those must be distinguished in which none of the local symptoms, as mentioned above, are present, while in remote organs there appear disturbances based upon the presence of the neoplasm.

Most frequent and important among such disturbances are cardiac symptoms, viz., irregularity of the action of the heart, mostly tachycardia, cardiac asthma, furthermore, hypertrophy and dilatation, and especially, brown atrophy and fatty degeneration of the heart muscle. A perfect agreement in the various explanations of these symptoms has not yet been secured. They have been compared to the physiologic hypertrophy and dilatation of the heart during pregnancy. This condition is produced by the enlargement in the circulatory area within the pelvis and the total amount of blood (W. Müller³²) and by the increase of the intra-abdominal pressure and the tension of the abdominal walls. Both pressure and tension cause a uniform compression of the abdominal blood vessels, and thus renders circulation more difficult (Lahs,³³ Engström³⁴). The rigid consistency of the fibroids tends to the same result.³⁵ Again, the constant augmentation of the action of the heart combined with the deterioration of the quality of the blood leads to brown atrophy and fatty degeneration. Wilson³⁶ also refers the degeneration of the heart to the pressure of the tumor upon the ureters. This leads to degeneration of the kidneys and the latter, in its turn, leads to degeneration of the heart.

Robinson³⁷ endeavors to explain this influence upon the

heart as a reflex neurosis. According to him the tumor irritates the peripheral ends of the hypogastric plexus which transmits the impulse to the sympathetic ganglia of the abdominal cavity, then by way of the splanchnic nerves to the cervical ganglia and, finally, through the cardiac nerves to the heart itself. Furthermore the irritation is forwarded by the vagi to the spinal cord which is in direct connection with the heart, by way of the cardiac nerves.

Subserous and intramural fibromyomata frequently produce symptoms of pressure upon neighboring organs, but may exist without local symptoms. I here refer to vesical tenesmus and retention, and to obstipation and excessive flatulence in the bowels. Such pressure-symptoms are readily understood in colossal tumors which fill almost the entire abdominal cavity. But cases of this extraordinary size are rather uncommon. In smaller, but very slowly growing fibroids, a great adaptability of the organism to the presence of the neoplasm may be found. In these cases, however, pressure symptoms may sometimes be observed, caused by the enlargement of the tumors, due to premenstrual and menstrual congestion. Thus, a neuralgia of the sciatic may occasionally occur which we fail to cure with the salicylates or other agents until we detect the real cause upon a gynecologic examination. As a result of such a temporary expansion of the myomatous uterus, v. Winckel³⁸ saw stercoral vomiting twice in the same patient, and Törngren³⁹ observed in the clinic in Helsingfors a case of complete occlusion of the bowels, which ended fatally.

Pressure upon other adjacent structures, of course, may also be observed. The compression of the ureters with secondary degeneration of the kidneys has already been mentioned. The development of hemorrhoids with copious hemorrhage in cases of myoma is recorded by Eisenhart.¹⁷ Frequently compression of the femoral vessels occur, and a patient who consults us for chronic varices or for thrombosis, may have unconsciously transported within her pelvis the real cause of her trouble, viz., a myoma, during many years,

A peculiar reflex neurosis in myoma uteri consisting of an extreme and tormenting dryness of the mouth, is reported by v. Winckel.³⁸ Eisenhart¹⁷ mentions reflectory gastric symptoms in the early stages of interstitial fibroids, and Schauta²⁶ has found with certainty an interconnection between reflectory skin diseases and uterine fibroids.

If we now proceed to take the symptomatology of carcinoma uteri into consideration we must bear in mind that here a problem of vital importance awaits us. In the earliest stages of carcinoma the local symptoms, namely, hemorrhage and discharge from the vagina, are extremely rarely in evidence. When they finally appear they are only too often neglected by both patient and physician, inasmuch as in these primary stages the general health is not impaired to any appreciable extent. Cachexia is not yet noticeable. On the contrary, not infrequently are cases noted in which the patient is constantly gaining in weight. Since only an early diagnosis of this most dangerous disease gives a favorable prognosis for successful treatment, it is our imperative duty to pay the greatest attention to any symptom, however trifling it may appear, and to insist upon a careful examination in every suspicious case. Fortunately, in some few cases, valuable hints are given by the bladder and the rectum. Patel⁴⁰ calls attention to the fact that retention of the urine may be the very first symptom of uterine cancer and demands that an exact gynecological examination should be made in every obscure case of vesical disturbance. Williams⁴¹ also states that relatively often cancer has made considerable progress before any indications of its existence are apparent, and mentions that in one out of sixteen cases of "vaginal cancer," retention of the urine was the only symptom which caused the patient to seek his aid. Orthmann⁴² demonstrated such a case before the Gynecological and Obstetrical Society in Berlin, but a few months ago. The patient complained of no other symptom, save of an urinary character, while examination revealed the vagina nearly filled with a cauliflower growth which projected from the posterior lip of the uterine os.

If the cancer advances toward the rectum, diarrhea or profuse outflow of thick mucus not infrequently occurs.

Reflex neuroses have never been observed in carcinoma. It is a peculiar and remarkable fact that the gravest diseases of the female sexual organs run their course without producing any nervous disturbances. For this fact we have no explanation. The adversaries of the theory of genital reflex neurosis have drawn from this point the conclusion that reflex symptoms are nothing but hysterical manifestations, a conclusion which appeals to me to be both illogical and unproven.

It is hardly necessary that the vast symptomatology of all

the other types of gynecological diseases should receive an elaboration in detail. I desire merely to advert to a few of the more marked cases recorded in literature.

Profanter⁴³ observed a patient who for years suffered from a so-called sciatica. She had been subjected to many methods of treatment without benefit. Finally, quite to her own surprise, she was advised to submit to a gynecologic examination. This disclosed a perioophoritis of the left side, with left ovarian dislocation, but the reflex neurosis in the left thigh could not be produced by manipulation with the left ovary. Only a careful search of the left part of the pelvic cavity revealed the seat of the affection. At the site where the sciatic nerve, overbridged by the pyriformis, tends through the greater ischiadic foramen obliquely down to the gluteal region, there were discovered chronic inflammatory masses of an extraordinary sensitiveness. Even the lightest touch upon these promptly produced an attack of sciatic pain.

The same author cites among other cases an observation by Aran.⁴⁴ A young provincial suffered with a cough. Her family considered it to be of a tubercular character. She was brought to Paris. Suspecting the cough to be but a reflex neurosis, Aran examining gynecologically, discovered a metritis with a slight discharge. Cure of the metritis cured the cough.

Ultzmann⁴⁵ mentions a woman, aged 27 years, in whom the total output of urine in twenty-four hours exceeded an average of forty-two pints. Hydrotherapy, arsenic and the bromides afforded no relief, while local treatment of an existing endometritis cured the polyuria in speedy fashion.

Boldt⁴⁶ describes a unique case of vasomotor reflex neurosis dependent upon a dislocated ovary. With the first appearance of the menstrual flow at the age of 13 years, the girl noticed a purple discoloration of the right upper extremity, interwoven with white spots, the size of a lentil, and a swelling on the right leg and foot, without discoloration, was manifest at the same time. During each menstrual period the upper extremity felt cold, the change in sensation beginning one day prior to the flow and reaching its height on the fifth day. In addition to this, paresthesias were felt. When seen by Boldt, there were decided differences in the measurements between the right and left side, and the superficial veins and capillaries of the affected side as well as the veins of the ante-

rior surface of the thorax, were greatly distended. A severe pain in the right inguinal region, for which the patient came for advice, was considered to be due to an enlarged and prolapsed ovary. After this was extirpated, the girl was entirely cured of the dysmenorrhea and with it the neurosis also disappeared.

From all the foregoing, the following conclusions are evident:

1. Diseases of the female sexual organs occur sometimes without local symptoms, but at the same time may produce disturbances in remote organs.

2. If these disturbances are transmitted by way of the nerve tracts they must be considered to be genuine genital reflex neuroses and can be differentiated from hysterical manifestations.

3. Not every ailing woman should be subjected to a gynecologic examination at once. But in the absence of sufficient cause elsewhere, or when a rational treatment has proved ineffective, the possibility of a pelvic disease should be borne in mind.

4. In the climacteric woman a gynecologic examination should be early made in every somewhat suspicious case to facilitate the discovery of the possible existence of a malignant growth and to ameliorate the otherwise grave prognosis by the introduction of an adequate treatment.

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The Cecum: In Relation to the Psoas Muscle in 310 Adult Male and 125 Adult Female Autopsies.

Trauma of the Psoas Produces (Peritonitis) Pericecal
Peritoneal Adhesions.

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(Continued from page 254 October Number).

THE TYPES OF CECA.

From the days of Huschke (1844), who wrote the first modern book on abdominal visceral anatomy, anatomists have here and there noted the types of ceca. Huschke, himself, noted the fetal type. Treves noted four types of ceca, which classification has been adopted. I have noted the types of ceca for twelve years in abdominal sections and autopsies. Considerable latitude of judgment must be allowed in observing types of ceca, as they merge gradually into each other. It may be noted that the point of observation of the type or shape of the cecum is made while viewing it from the anterior surface.

We shall assume for practical purposes four types of ceca. The type of a cecum depends on the size of the segments lying to the right and left of the anterior tenia coli.

1. *The Fetal Type* (males 34 per cent, females 37 per cent). The fetal type is a condition where the cecum resembles that found in the fetus and infant. The three tenia coli in the fetal type pass almost equidistant from each other from the right colon to the base of the appendix dividing the cecum into three fairly equal segments. The fetal cecum is generally in line with the axis of the right colon. The fetal type of cecum may be present throughout life, and is about equal in male and female. It is conical in shape from apex to base. Of the tenia coli one band lies on the anterior surface of the cecum, one lies on the surface of the cecum in which the distal ileum enters, and a third band courses on the posterior external cecal surface.

2. *The Symmetrical Type* (males 38 per cent, females 30 per cent). The symmetrical cecum presents an equal bulging sacculus on each lateral aspect of the apex. The three tenia coli retain their relative position. The apex does not extend as far distalward as the lateral bulging pouches on each side of the anterior or media tenium coli. I found this type of cecum in the apes with large collosities, that is, those apes who sit erect much of the time—thus resembling man in attitude. All parts of the symmetrical cecum develop equally, presenting a quadrilateral prismatic form, and its apex is rather a depression than a cone. Males preponderate with this type of cecum.

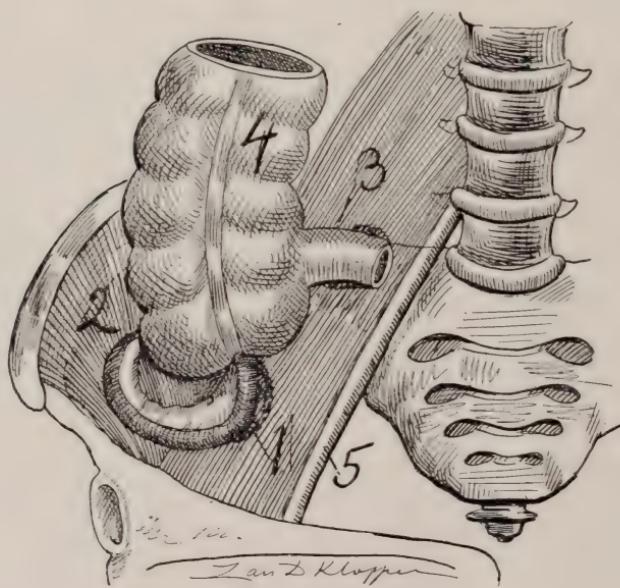


FIG. 9.—Author.—Illustrates the relations of the cecum and appendix to the ileopsoas muscle. Note that the ileum, 3, and the appendix, 1, coming within the traumatic range of muscular action possesses peritoneal adhesions. Pericecal peritoneal adhesions are not drawn.

3. *The Non-symmetrical Type* (males 22 per cent, females 24 per cent). This type of cecum presents an unequal sacculus on each lateral aspect of the anterior tenium coli. The sacculus to the left of the tenium coli becomes atrophied, while that to the right of the tenium coli develops into a large

pouch. The tenia coli do not retain their relative position, as the parts of the cecum develop unequally. The sacculus on the right side of the median tenium coli grows out of proportion to that of the left side and may develop so great that it practically forms a new or substituted apex for the cecum. The cecal apex moves more and more toward the left until it approaches almost to the ileocecal junction and one can find the

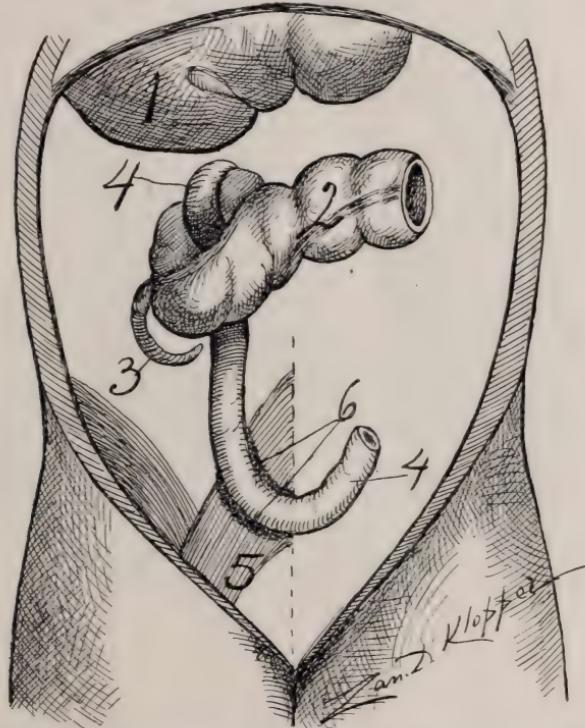


FIG. 10.—Author.—Illustrates a partially descended cecum and appendix. The appendix can assume the potential position from the presence of an elongated mesocolico-mesenteron, and there is a volvulus of one half rotation (180°). 5, psoas; 3, appendix; 6, ileum; 2, right colon; 7, ileac muscle, 6^a, peri-ileac peritoneal adhesions, where the ileum crosses long-range of traumatic action of psoas.

cecal apex by noting the origin of the base of the appendix. The anterior cecal wall grows faster than the posterior, which results in forcing the cecal apex posteriorly, distorting it, and this last factor may explain to some extent the frequent volvulus of the ileocecal apparatus. Males and females share this type of cecum quite equally.

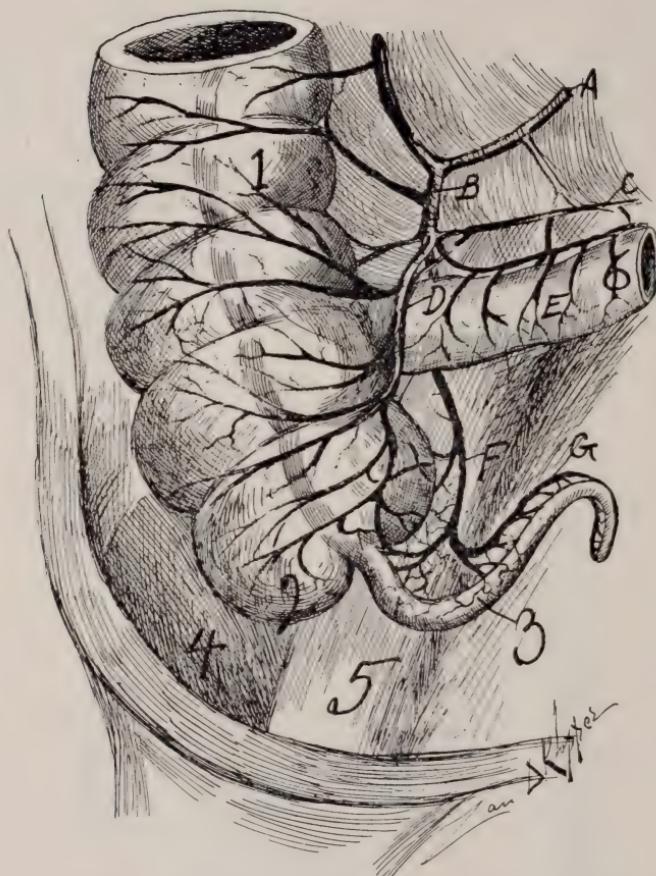


FIG. 11.—Author.—The arterial blood supply of the anterior (ventral) surface of the cecum and appendix. A, ileocolic artery; B, cecal-appendicular artery; D, anterior cecal artery; F and G, appendicular artery. Note the cecal and appendicular arteries anastomose by fine capillaries, both ventral and dorsally; C, ileal artery; 1, right colon; 2, external sacculus of cecum (to right of tenium coli); 3, appendix; 4, ileac and 5, psoas muscles. Trauma of the psoas muscle produces periappendicular and pericecal peritoneal adhesions, compromising the circulation of the two organs. Note the fine vessels nourishing the appendix. The appendix is easily gangrened because its blood supply is cut off by pressure within its lumen and thrombosis of its vessels. The blood supply of the cecum shows that it can, like the stomach, scarcely be gangrened, while the blood supply of the appendix shows how easily it can be gangrened.

4. *The Atrophic Type* (males 5 per cent, females 8 per cent). In this type the cecum presents as viewed anteriorly, the sacculus, which lies to the right of the median tenium coli. The right cecal sacculus has developed extensively and has apparently usurped the position of the whole cecum. The part of the cecum on the left has become so atrophied that it is more or less absent. The original cecal apex has disappeared at the ileocecal angle where the tenia coli meet—at the

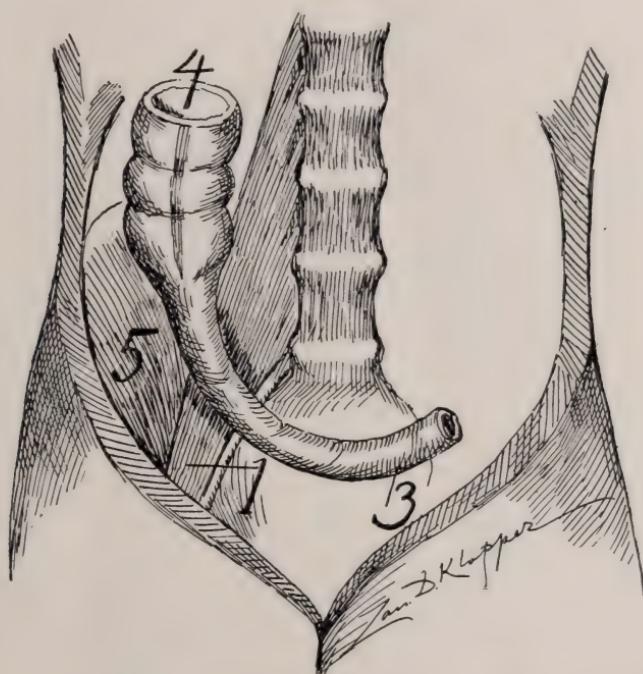


FIG. 12.—Author.—This remarkable case of congenital absence of the cecum and appendix was from the body of a female, aged 50 years, and was the only subject with the absence of the appendix and cecum in 435 cases of carefully recorded autopsies. 1, psoas; 3, ileum; 4, right colon; 5, iliac muscle. The subject was otherwise normal. Note peri-iliac peritoneal adhesions over psoas.

point where the distal ileum enters. The origin of the appendix lies almost posterior to the distal entering ileum. One-half, the right of the cecum, has developed into a large pouch which acts as a false cecal apex, while the left cecal half has not developed. Males and females share the atrophic cecum about equally.

THE CAUSES OF CECAL TYPES.

The type or shape of the cecum depends on its blood supply, which is the anterior and posterior branches of the ileo-colic artery. The anterior branch of the ileocolic artery reaches the anterior surface of the cecum through the mesenterico-colic fold whence it passes along the anterior surface of the cecum in a right convexity and left concavity. Many large branches pass from the convex side to the right half of the colon. Few small vessels pass from the concavity of the artery to the left half of the cecum. The chief cause of atrophy of the left half of the cecum is due to the partial failure of these arterial branches. The posterior branch of the colic artery reaches to the posterior cecal surface by way of the mesoappendix, and although it is a larger arterial branch than the anterior, its chief branches are lost on the appendix. Therefore, the anterior cecal wall being supplied by more blood than the posterior, grows faster and becomes larger.

The percentage of adhesions as regards the different types of ceca is not noted because pericecal peritoneal adhesions depend more on the proximity of the cecum to traumatic range of muscular action and the length of the cecal fixation apparatus.

The Percentage of the Types of Ceca—Males 310.

	Fetal.	Symmetrical.	Non-symmetrical.	Atrophic.
1st 100	27	30	34	9
2d 100	45	36	16	3
3d 100	30	48	18	4
I-3	102	114	68	16
Avr'ge	34%	38%	22%	5%

The Percentage of the Types of Ceca—Females, 125.

	Fetal.	Symmetrical.	Non-symmetrical.	Atrophic.
Avr'ge	37%	30%	24%	8%

THE DIMENSIONS OF THE CECUM (125 FEMALES).

Widest 4, narrowest 1, average $2\frac{1}{2}$ inches; longest 3, shortest $\frac{1}{2}$, average $1\frac{1}{4}$ inches.

The dimensions of the cecum in females vary about the same as in males, but it is slightly less in size, according to the smaller size of the female body. The width of the cecum is expressed by a line drawn transversely across the cecum at the distal end of the ileum. The cecal length is expressed by a line drawn perpendicular to the first.

THE DIMENSIONS OF THE CECUM (310 MALES).

Widest 4, narrowest 1, average $2\frac{1}{2}$ inches; longest 3, shortest $\frac{1}{2}$, average $1\frac{1}{2}$ inches.

The dimensions vary vastly (1 to 4 inches in width and 1 to 3 inches in length) as to the state of distention. The above measurements were taken some considerable time after death, or when cecal contraction existed—a kind of rigor mortis. The greatest variations in dimensions of the cecum is in its length, that is, in the distance between the bases of the appendix and the entrance of the distal ileum. This is best studied in the four types of ceca.

NON-DESCENT OF THE CECUM.

It is well known that the cecum may remain non-descended throughout life. However, I was surprised to find 31 cases—10 per cent, of distinctly marked non-descent of the cecum in 310 adult males. In non-descent of the cecum no right colon or mesocolon occupies the usual position of the apparatus. From the examination of the records in 435 adult subjects on which is based these data, it appears that the segment of the tractus intestinalis which is arrested in non-descent of the cecum is chiefly the appendix, caught in some fetal or post-natal peritonitis. This condition is arrived at from the fact that most arrested ceca (67 per cent) are of the fetal type, and that frequently the peritoneal adhesions are found chiefly adjacent to the appendix. In arrest of the cecum at the gall-bladder, the axial rotation of the tractus intestinalis is incomplete, there is a mesenterium commune (mesocolico-mesenteron), the intra-uterine peritonitis appears to have constricted the blood supply so that the fetal cecal type persists, and the right, with the transverse colon, forms one indivisible segment, no hepatic flexure existing.

Non-descent of the cecum, whether the cause be (intrauterine) peritonitis, or otherwise represents a primitive condition of man's tractus intestinalis in which the axial rotation about the superior mesenteric vessel has become arrested before the usual adult stage is approached. It is well for the surgeon to anticipate the non-descent of the cecum, as right lumbar colostomy to be performed extraperitoneally requires the right colon in its usual position and also a segment of the posterior surface of the colon uncovered by peritoneum.

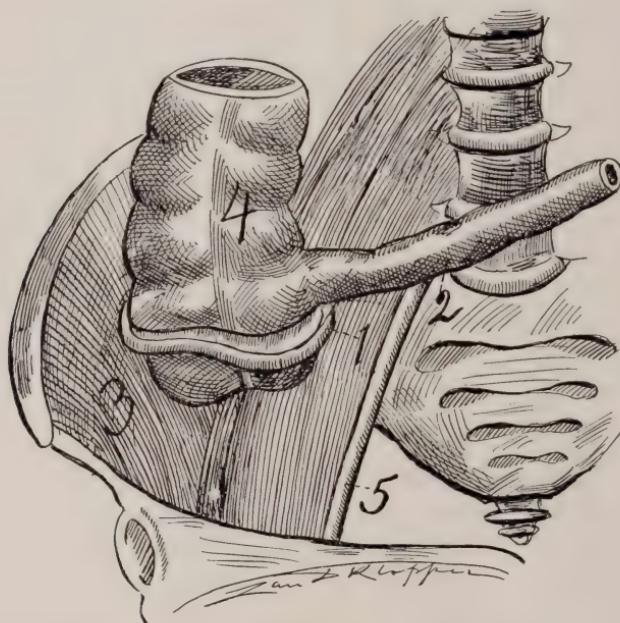


FIG. 13.—Author.—Illustrates a position of the cecum and appendix relative to the psoas. Here the appendix passes anterior to the cecum and is not within traumatic range of action of muscle and artery, hence no peritoneal adhesions appear. 1, appendix; 2, ileum; 3, iliocostalis muscle; 4, right colon; 5, common iliac artery. No peritoneal adhesions are drawn in the illustration.

The study of the cecum in 310 adult males showed more than double the percentage of non-descent of the cecum than in 125 adult females.

The three organs—appendix (70 per cent), cecum (54 per cent) and ileum (76 per cent) in non-descent present respectively, more peritoneal adhesions than normal cases. This is doubtless due to trauma of the liver, produced by its action on the

diaphragmatic muscle. It is not infrequent to find in splanchnoptosis that the distal edge of the liver has vigorously forced the right colon to the edge of the pelvic brim, whence the ligamentum colico-phrenicum prevents the colon from passing further distalward, and almost the entire line where the liver traumatizes the right colon is surrounded by peritoneal adhesions. In numerous cases the ligamentum phrenico-colicum holds the cecum from descending into the pelvis.

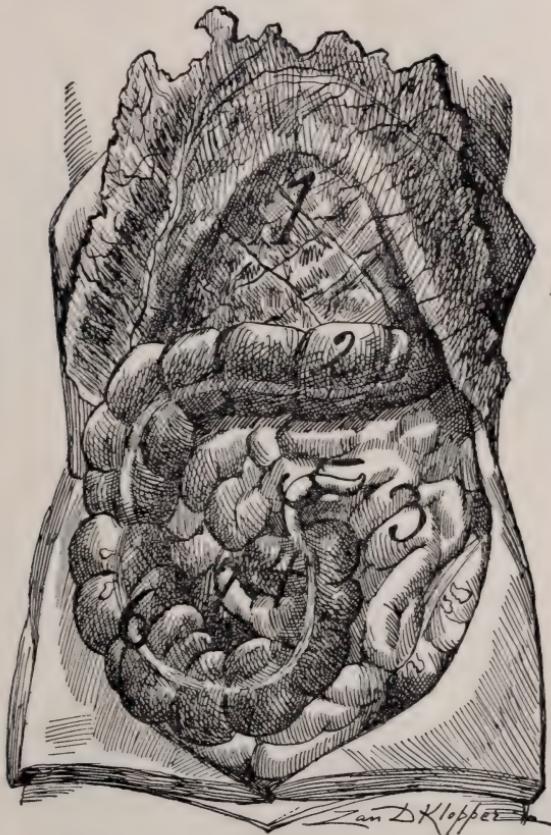


FIG. 14.—Author.—The cecum and appendix in the potential position, illustrating a subject with the omentum reflected proximalward over the chest. The cecum and appendix both occupy the potential position, that is, among the coils of the enteron - dangerous area of peritonitis (the colonic area is the benign area of peritonitis). 1, reflected omentum; 2, colon transversum; 3, coils of enteron; 4, cecum; 5, appendix; 6, right colon; 7, coils of enteron between cecum and right colon.

Practically, 310 adult males presented 8 per cent of non-descent of the cecum, and, consequently, the appendix; 5 per cent was so typical as to interfere with diagnosis and surgical intervention. This is important to the physician as to the location of pain, the site of the required incision and to be able to make a differential diagnosis between disease in the gall-bladder, appendix and kidney. Observe the complications in non-descent of the cecum, as on the right side a silver dollar will cover an important area occupied by important organs, including the appendix, the kidney, the adrenal, the pylorus, the gall-bladder, the hepatic flexure of the colon, and the head of the pancreas.

Non-descent of the cecum may change the whole diagnostic and even prognostic aspect of the clinical field. No 7, through a non-descended cecum, lying immediately below the liver, yet occupies a potential position, because it could be made to touch any abdominal viscus. The intrauterine peritonitis had arrested the descent of the cecum but the long mesenterium commune and post-natal dragging had endowed it with an elongated fixation apparatus—the mesenterico-mesenteron.

No. 36 was arrested immediately under the liver, requiring six inches of the ileum to reach from the usual point of the right of the psoas, crossing to the non-descended cecum, but it had a seven-inch mesenteron at the ileocecal junction, and although some pericecal and periappendicular adhesions existed the appendix could be made to touch every abdominal organ—it occupied a potential position.

A cecum may become arrested in its distal journey from the liver to the iliac fossa and practically assume such a position through life, but in post natal life the fixation apparatus may become so elongated that it can move about through a large abdominal area yet always tending to assume its original arrested position. In states of distention of the viscera it may assume a temporary position among the loops of the enteron.

In No. 46, the cecum lies on the right kidney. The kidney appears to be the favorite spot for the partially descended cecum to stop. This may be mechanical, as scarcely ever does the right colon possess a mesocolon over the kidney, though it may possess a mesocolon occasionally distal to the kidney but frequently proximal to the kidney the mesocolon is liberal. The partially non-descended colon is not infrequently

rotated to three-quarters of a circle on the colic axis—it is very liable to volvulus; 30 per cent of volvulus occurs at the ileocecal apparatus. The non-descended cecum (and appendix) is very liable to possess a mesenterium commune, a mesocolico-mesenterium which predisposes to volvulus of the ileocecal apparatus. When only one segment of the bowel lies in

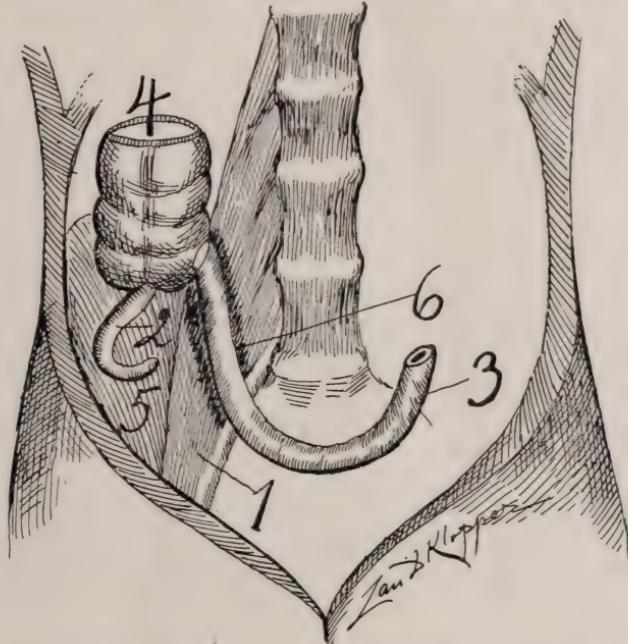


FIG. 15.—Author.—Illustrates a cecum not fully descended. The long appendix is practically descended. It is another type sketched from a subject where the ileum, 3 and the appendix, 2 come within range of action of the psoas. The cecum is free from adhesions, though it lies on the iliac muscle, because the range of the iliac muscle is insignificant in action; 6, peri-ileac peritoneal adhesion.

the range of traumatic action of the psoas, it is nearly always surrounded with peritoneal adhesions, e.g., the ileum alone passing over the psoas frequently presents peri-ileac adhesions.

The accompanying tables of partial descent of the cecum and, consequently, the appendix, shows—1, a tendency to fetal type, 67 per cent; 2, arrest of cecum on the kidney and adrenal; 3, arrest of cecum adjacent to gall-bladder; 4, mesenterium commune in partial non-descent of the cecum; 5, variableness of the ileocecal apparatus; 6, 70 per cent of periappendicular adhesions exist in partial descent of cecum and

TABLE.

No. of Case.	Length of Ileum required to pass from Ilioas to meet non-descending Cecum. Inches.	Length of Appendix. Inches.	Periappendicular Adhesions.	Peri-ileac adhesions where Ileum crosses Ilias.	Pericecal Adhesions.	Type of Cecum.
7	4	6	Adhesions	No adhesions	No adhesions	Fetal
17	2.5	2.5	Adhesions	Adhesions	Adhesions	Fetal
27	2	3	Adhesions	No adhesions	No adhesions	Atrophic
36	6	3	No adhesions	No adhesions	No adhesions	Symmetrical
46	3	3	Adhesions	Adhesions	Adhesions	Symmetrical
69	4	4	Adhesions	Adhesions	No adhesions	Non-symmetrical
78	3	3.5	Adhesions	Adhesions	No adhesions	Fetal
80	2	3	No adhesions	No adhesions	No adhesions	Fetal
81	3	4	No adhesions	Adhesions	No adhesions	Fetal
91	2	2.5	No adhesions	Adhesions	No adhesions	Symmetrical
96	2	4.5	No adhesions	No adhesions	No adhesions	Fetal
103	5	3	No adhesions	Adhesions	Adhesions	Fetal
128	6	3	Adhesions	Adhesions	No adhesions	Fetal
130	6	3	Adhesions	Adhesions	Adhesions	Fetal
134	5	4	Adhesions	Adhesions	Adhesions	Fetal
140	2	2	Adhesions	Adhesions	Adhesions	Fetal

TABLE—CONTINUED.

No. of Case.	Length of Appendix. Inches.	Periappendicular Adhesions.	Periileac where Ileum crosses Psoas.	Pericecal Adhesions.	Type of Cecum.	
168	2	2.5	Adhesions	Adhesions	No adhesions	Fetal
158	2	2	Adhesions	Adhesions	Adhesions	Fetal
188	3	1	Adhesions	Adhesions	Adhesions	Symmetrical
200	4	4	Adhesions	Adhesions	No adhesions	Fetal
221	3	2.5	Adhesions	Adhesions	Adhesions	Fetal
226	6	5	No adhesions	Adhesions	Adhesions	Fetal
234	6	2.5	Adhesions	Adhesions	Adhesions	Symmetrical
252	6	3	No adhesions	Adhesions	Adhesions	Symmetrical
253	3.5	4	No adhesions	No adhesions	No adhesions	Fetal
240	1	3	Adhesions	Adhesions	Adhesions	Fetal
249	3	5	Adhesions	Adhesions	Adhesions	Fetal
254	3	1.5	Adhesions	No adhesions	No adhesions	Symmetrical
258	3	3.5	Adhesions	Adhesions	Adhesions	Non-symmetrical
282	2	3.5	Adhesions	Adhesions	Adhesions	Fetal
288	2	3.5	Adhesions	Adhesions	Adhesions	Fetal
31	Average, 3.5 inches.	Average, 3 inches.	Adhesions in 22, 70%.	Adhesions in 24, 67%.	Adhesions in 17, 50%.	Fetal, 21, 67%, sym. 7, 22%, non-sym. 2, 6%.

appendix; 7, that 54 per cent of pericecal peritoneal adhesions exist in partial cecal and appendicular non-descent; 8, that 76 per cent of peri ileac adhesions exist in partial descent of the cecum and appendix where the ileum lies on the psoas; 9, though the cecum is partially descended the appendix and even the cecum may assume a potential position, due to the frequent presence of a partial mesenterium commune; 10, intrauterine peritonitis appears to be the basal cause of partial non-descent of the cecum and, consequently, the appendix.

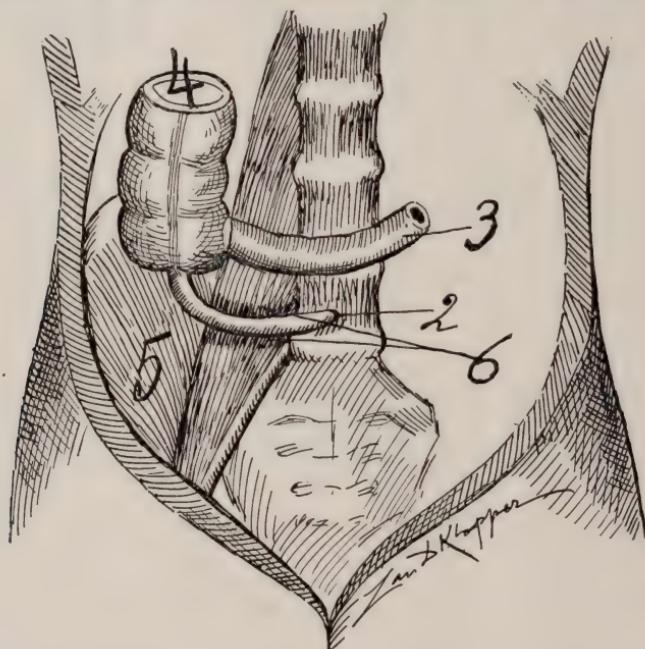


FIG. 16.—Author.—Illustrates a form of non-descended cecum more frequent than Fig. 19. 1, psoas; 2, appendix possessing periappendicular peritoneal adhesions; 6, where it crosses the psoas; 3, ileum (no peri ileac peritoneal adhesions, as it is out of range of action of the psoas); 4, right colon; 5, iliac.

PERICECAL PERITONEAL ADHESIONS.

Pericecal peritoneal adhesions are of importance, as they compromise: 1, the lymph and blood circulation of the cecum; 2, adhesions compromise cecal peristalsis and, hence, the fecal current is hindered; 3, adhesions traumatize nerve periphery, inducing pain and devitalize; 4, they compromise the mobility of the cecum; 5, adhesions which compromise the appendix; 6, adhesions which fix

the cecum compromise it—*a*, by fixing it within range of muscular and other trauma *b*, they render its mucosa a prey to ulceration; *c*, its myocecum to perforation; *d*, its pericecum to repeated invasions of peritonitis; *e*, the pericecal adhesions of man are due to the erect attitude and are the consequence of muscular trauma (ileopsoas chiefly). 310 males presented 60 per cent of pericecal peritoneal adhesions; 125 females presented about 48 per cent of pericecal peritoneal adhesions.

In the tables of the cecum showing the percentages in regard to pericecal peritoneal adhesions, the numbers appear higher. But it must be remembered that some cases of pericecal peritoneal adhesions are counted twice, *e.g.*, a cecum may be found lying on the psoas and possessing pericecal peritoneal adhesions, but this same cecum may be capable of assuming the potential position; therefore, in the table it will be numbered also "potential" with pericecal peritoneal adhesions.

In estimating the peritoneal adhesions in the right iliac fossa, which practically means the adhesions created by psoas trauma, three organs must be examined, viz., appendix, cecum and distal ileum, for if any one of the organs comes within range of the traumatic action of the psoas it is liable to be surrounded by peritoheal adhesions.

Besides, one or two of the organs may be free, while the third possesses peritoneal adhesions. In other words, any or all may be free, or any or all be surrounded by peritoneal adhesions about the right psoas is difficult to record. However, I consider a safe estimate to be 70 per cent of peritoneal adhesions adjacent to the right psoas in adults.

(To be Concluded.)

Two Cases of Epithelioma Treated by X=Rays.

By H. N. CHAPMAN, M.D.,

ST. LOUIS, MO.

I DESIRE to present to you this evening two cases for your consideration. The first case, Mr. T., aged 72 years, has suffered from an epithelioma over the zygoma

on each side of the face; that of the left side having involved the superior maxilla, pus is discharging from the nostril; that of the right ride involves the eyelid. When first seen he was very feeble, could hardly walk, was pale and cachectic. Dr. Nietert reports it to be a true epithelioma of both sides.

I began x-ray treatment, using a medium tube anticathode about six inches from the face, fifteen minutes daily, for a week, then three times a week. Improvement was marked in both local and general condition. The necrosed bone which shows through the ulcer on the left side continues the free discharge of pus. The opposite side is markedly improved. The greatest manifestations, however, being in the patient's general condition, which is little short of marvelous. The treatment has now been continued for about two months.

CASE 2.—This patient, as you see, is a colored man, aged 32 years. He was attacked by a chancer on the head of the penis about eleven years ago, which was healed, but continued to break out again and again, until now, as you see, the penis has been eroded entirely away, leaving only a stump three-quarters of an inch long; ulceration now extends across the pubes, taking in all that space usually covered by hair, down between the legs and scrotum, the scrotum itself being thick and nodular in parts.

When first seen he was suffering much with pains, radiating down the legs, emaciation and general debility; he could not sleep at night and had no appetite. The belief seemed to be that this was a syphilitic ulcer, but two microscopic examinations by Dr. Carl Fisch were made, and he reports epithelioma.

The x-ray treatment was begun two months ago, and as you will observe, healing is progressing very favorably indeed. The general symptoms have all been subdued, the patient gaining in weight all the time.

I hope to report these two interesting case in their final outcome.

LEADING ARTICLES.

INCESSANT VOMITING WITH ACETONEMIA.

By A. S. BLEYER, M.D., St. Louis.

Marfan (*Archiv de Med. des Enfants*) describes a condition that I do not find recorded, as a disease, in the literature. It is one that might well be grouped in the category of cyclic vomiting of children, although it is marked by no special periodicity.

The interesting condition which he describes consists of attacks of vomiting of a very persistent, uncontrollable nature, which last for five or six days. Children between the ages of 6 and 10 years are most frequently attacked, although it has been observed as early as the first year, but never, however, in nurslings.

The attacks are usually preceded by lassitude, slight anorexia and headache. The vomiting comes on spontaneously, and there may be a period of quiescence lasting a few hours before it sets in the dominant feature of the sickness. It is provoked by a very slight stimulus —a little food, a drink even, or pulling on the tongue.

The breath has a strong odor of acetone. Acetone is likewise abundantly present in the urine. Little or no fever accompanies the attack and, as a rule, it subsides of itself in from four to six days. Some cases were well in three days and some lasted fourteen; in such latter instances much depression of the vital forces was observed; the great weakness and emaciation occurring in protracted cases is attributed more to the incessant severity of the vomiting than anything else, since the systemic disturbances are so slight as not to be apparent.

Recovery is usually rapid, occurring almost as spontaneously as the beginning of the trouble. Convalescence is rapid, but recrudescences are frequent, and the disease is often found in more than one child in a family at the same time.

As to the etiology, it is quite obscure. Gastric and intestinal derangements are not in evidence previous to the attacks to any degree.

Those of neurotic and arthritic temperaments are, as a rule, the subjects, although these antecedents are not always present.

The origin of the acetonemia should suggest where the trouble lies. It is known that such a state is commonly observed in diabetic coma, in certain eruptive diseases, many nervous diseases, infantile convulsions, etc., which might suggest some analogy in point of causation.

Most authors are in accord that an excretion of acetone points to a rapid disintegration of tissue, but the point is not of much suggestive value, except that it might point, together with the rapid onset and course of the affection, to some sort of intoxication. The only disease which should cause any difficulty in diagnosis is the projectile vomiting of tuberculous meningitis.

The leading differential points are, that in tuberculous meningitis, the age of predilection is from 2 to 6 years; the head symptoms are decidedly more marked and quite characteristic, together with the long train of motor disturbances—of vision particularly. The slight, but increasing temperature, the wasting, etc. The facies are distinctive in the two conditions; in the vomiting with acetonemia the appearance becomes cholericiform.

The vomiting in tuberculous meningitis is, as a rule, not a very precocious symptom, while in the other disease it is the one dominating manifestation from the start.

Acetonemia may occur in tuberculous meningitis, but it is not common, nor even marked, nor early. Marked inanition or convulsions are usually necessary for the secretion of acetone in the urine in tuberculous meningitis.

As to treatment: Sugar-water is used, or milk, given very cold; this seems to be best borne by the stomach, and to give the most satisfactory results; it is given in very small quantities often repeated.

Since the disease is apparently one of acid intoxication, it might be well to administer magnesia in fractional doses—three or four grains given five times in twenty-four hours. If there is much weakness, it is recommended by the author to give injections of artificial serum, 40 to 60 c.c. morning and evening.

Marfan has in a number of cases seen entire cessation of vomiting after such injections.

RELAPSES IN TYPHOID FEVER.

One of the most interesting questions of pathology is the origin or causation of a relapse. This term has become definitely restricted to a return of the disease by reinfection. The term "recrudescence" is used to designate a return of pronounced symptoms during the defervescence of a fever.

A relapse in many diseases is caused by an infection in a different locality. Thus, a relapse of pneumonia is understood to mean that another portion of the lung is invaded. A relapse of diphtheria may mean that another part of the fauces is the seat of the pseudomembrane. It is generally recognized that the production of immunity may be principally local; hence the possibility of another site becoming diseased.

Much more puzzling are those diseases in which the pathologic process is essentially a septicemia. Such diseases are typhoid fever and rheumatism. The relapses in the latter disease are so common that it is looked upon as one of its special peculiarities. Most interest is, therefore, attached to the relapse in enteric fever. One, two, or even more relapses may occur in this disease. The question is not so much whence the bacteria which cause the reinfection have their source, but how it is possible for them to find a place of growth, without being destroyed at once by the protective forces of the body.

Certain special features are generally recognized by clinicians as applicable to the relapse in typhoid fever. These are the shorter course, the lower mortality, its sudden onset, and the fever is more irregular.

The newest theory has been advanced by Dunham. He "assumes that no infection is a simple process in which all organisms of the same species are identical, but an infection is a complex phenomenon due to the infection with the varieties and subvarieties of the infecting agent, no one of which being identical with nor equivalent to any other one." When the groups are more or less identical, the infection is normal or isozymic; when several varieties preponderate, the infection is abnormal or anisozymic. Each variety must have its corresponding antibody formed in the circulation.

If the different antibodies are formed promptly to correspond with all the varieties of bacteria, recovery without any tendency to relapse will occur; but if antibodies against one or more of the varie

ties, which have outstripped other varieties in growth, are formed and overcome their influence, then these minor varieties have free access and grow without hindrance. These secondary varieties are usually the least active and hence the relapse is milder and shorter than the initial infection.

Warfield (*Johns Hopkins Hospital Bulletin*, No. 136) has reported a case with three relapses and has written very interestingly on this subject. Altogether he is inclined to receive the theory of Dunham with favor, and believes that it is supported by modern experimentation, and the discovery of innumerable antibodies in bacteriolysis.

THE MORBIDITY OF THE PUPERIUM.

Modern asepsis has probably achieved its greatest boon in its prevention of the enormous mortality incident to the puerperium from septic infection. When it is recalled that the maternity of 25 years ago was the destroyer of so many lives, the mortality often reaching 25 per cent, and our lying in hospitals at the present time show a mortality of less than 1 per cent, the beneficence of asepsis is obvious.

The causes of puerperal fever has been definitely traced to the introduction of virulent bacteria into the genital canal, yet all obstetricians are familiar with a mild form of fever lasting from one to three days, the origin of which is still somewhat obscure. The morbidity of the puerperium is by no means entirely overcome. The temperature may not rise over 101°F. and the pulse not exceed 100, but there is some headache, the tongue is slightly furred, there is increased thirst and sleep may be disturbed. All these symptoms may arise where the most careful asepsis was employed during confinement.

Zangemeister has recently studied the morbidity of the puerperium in Leipzig. The number of births was 1448, many of whom had a temperature not over 101°F. Of the whole number, 310 women had a temperature over 101°F. The fever continued one to two days only in 159 cases. This occurred especially on the second to the fourth day after labor.

While occasionally an autogenetic infection is possible, in the vast majority of these cases this could be excluded. He argues at length against the possibility of infection from the hand or genitals.

The etiology of these mild fevers must be sought in the decomposition of the lochia by normal vaginal saprophytes. The absorption takes place through some wound in the genital canal, most commonly the cervix.

It follows that modern antiseptic methods can have little influence on this fever and can, therefore, not entirely prevent puerperal fever.

LACTATION ATROPHY OF THE UTERUS.

The inability or disinclination of the mother to nurse her baby entails a great danger on the infant. The practice of bottle-feeding with its attendant evils will never equal good maternal nursing, both in the development of the baby, its morbidity and mortality. Hence paediatricians are continually urging the mothers to nurse their babies, and ways and means are being devised for overcoming the disorders which engender an inability on the part of the mother.

But there is still another side to this question. Not only is the infant benefitted by nursing, but the mother also reaps a more or less permanent benefit.

In the first place, the mother should derive a certain amount of pleasure from the act; her love toward the offspring is thereby strengthened, and maternity possesses a definite charm.

A more important result, which has a great bearing on her future health, is the lactation atrophy of the uterus. The process of post-partum atrophy of the uterus, or involution, holds a great part in determining future disease of that organ, and subinvolution is the recognized cause of displacements and endometritis.

But nursing induces firm contractions of the womb, and these contractions aid involution.

Vineberg declares that there is a lactation atrophy which is really a superinvolution. The uterus becomes smaller than normal during this period, but this superinvolution does not become permanent. The uterus again grows to its normal size when the lactation period has passed.

He furthermore has laid stress on the fact that this superinvolution is a physiological process, and disease is at a minimum among these women. Cancer is exceedingly rare among women who have nursed their babies.

On the contrary, women who do not nurse their babies are very apt to suffer from subinvolution and its attendant evils. Hence the gynecologist has increased work when the woman does not nurse her infant.

The attending obstetrician should watch the uterus for a prolonged period if the mother is unable to nurse. The normal hyperinvolution will not be established, and the process will extend over a much longer time.

EDITORIAL COMMENT.

Chauvinism in Medicine.

The addresses in medicine before medical associations are often very weak compositions, but this can not be said of the address in medicine recently delivered before the Canadian Medical Association by William Osler, of Baltimore. In elegance of diction and in the force of expression it can not be surpassed (see *Philadelphia Medical Journal*, September 27, 1902).

He refers to certain distinctive features of the medical profession,—its noble ancestry, its remarkable solidarity, its progressive character and its singular beneficence. He believes that nationalism in medicine is being eradicated, through the modern medical press and the students studying abroad, but provincialism persists in the form of Provincial and State Boards, each of which distrusts the work of another Board. Parochialism also is alive. It is found in the filling of appointments to the professoriate and in the inappreciation of work done elsewhere.

He sharply arraigns certain pharmaceutical houses who prey on the physician as the quack preys on the laity. The address must be read to be appreciated.

What is Intra-abdominal Pressure?

Quite a discussion on intra-abdominal pressure was aroused by the publication (*Central. f. Gyn.*, No. 22) of a brief article by R. Mayer. He contended that there is no such thing as intra-abdominal pressure in the sense that a normal positive pressure is constant. The

pressure varies continually. It varies with the position of the patient, muscular exercise, amount of gas in the intestine, and with the ingested fluid. In ascites and tympanites it may be very much increased. So also in pregnancy. It is also increased slightly with each inspiration as the diaphragm descends. A negative pressure is impossible on account of the resilience of the abdominal wall.

A New Kind of Quackery.

Modern commercialism is thoroughly stained with the practices of imitation and substitution. This gives it a peculiar color, which at a distance seems attractive and even brilliant; but on closer scrutiny its foulness is revealed.

Everything is imitated. The pure food, the genuine gem, and the valuable medicine find their host of inferior imitations. The professions are imitated; and the medical profession, standing highest among the avocations that insure earthly happiness, has its thousands of imitators in all forms. Quackery has ever abounded, and will continue to subsist on the ignorant and credulous.

Quackery takes a variety of forms. There is the ignorant practitioner who declares that he possesses the necessary qualifications. There is the charlatan who advertises impossible cures. There is the patent medicine vendor, who advocates the administration of his preparation for all human ills. Probably none of these have betrayed a trust; they at least are not traitors.

The newest species of quackery is found among certain manufacturers of proprietary medicines. A certain drug has been used by the profession and found valuable. The manufacturing chemist was the handmaiden of the physician. A distinct advance has been accorded practical therapeutics. The physician has used the preparation, has found its indications and contraindications, and the manufacturer has been financially benefitted. He owes his success and knowledge of his nostrum to the physician.

But the implicit faith of the physician is very rudely shaken; the handmaiden has become a monster. The manufacturer becomes engaged in the practice of quackery, and advertises his preparation to the laity. He permits individuals to make their own diagnosis if only

their drug will be used for certain symptoms. It is quackery of the basest sort.

To this practice physicians must show a bold front. No drug should ever be prescribed which is advertised to the people in general. It is the vilest kind of charlatanism and its promulgators are rascals and traitors.

The COURIER has no uncertain position in this matter. We shall publish some evidence of this kind of quackery in the near future, and publish the names of a few respectable (?) pharmaceutical manufacturers, unless there is a distinct change in some of their practices.

How does a doctor feel when entering a drug store and finds circulars advertising "The Cheatem Drug Co.'s Salvoria," for the infallible cure of coughs, cold, bronchitis and consumption, which preparation he has found useful to allay coughs, and has prescribed it for many years.

We feel that this is the highest type of medical charlatanism that has yet infected our honorable profession.

Insufficientia Pylori.

In the last number of the COURIER we drew attention to gastrosia fungosa, a new disease of the stomach. Now Knapp again writes on insufficientia pylori, which is also a very frequent disease of the stomach. It is the result of a chronic gastritis of the pyloric region, which terminates in a weakness of the pyloric muscle.

The process of digestion is hindered by the fact that the stomach is emptied too soon and chymification is incomplete. Intestinal indigestion of varying severity is the natural outcome.

The diagnosis depends on the clinical test of determining the state of the gastric contents. If the stomach is completely empty in one half to one hour the diagnosis is established.

The treatment depends on efforts to aid chymification by the careful preparation of food, prolonged mastication and lying on the left side after meals. Drugs that help intestinal indigestion should be used one hour after meals. Before meals gastric tonics may be given. (See Knapp, *New York Medical Journal*, October 4, 1902).

William Beaumont.

The recent lecture of Professor Osler on William Beaumont, the first American physiologist, has again revived the interest in this striking character. This physician had a rare opportunity thrust upon him, and he was not slow in recognizing it, and with persistent energy he followed up the advantage. It was the unwillingness of Alexis St. Martin that curtailed his researches.

It is surprising how his conclusions have been corroborated by the modern investigations of Pawlow and other physiologists.

Cannon, in an elaborate series of experiments on animals, was able to add but little to the conclusions of Beaumont concerning the motion of the stomach and the action of the pylorus.

As St. Louis claims him as a former citizen we can justly take pride in his researches and receive a lasting inspiration by his achievements.

The Medical Library.

If the question should be asked what contributes for the most part to a physician's continued success? unhesitatingly, the answer would be, continued study. It is unfortunate that a large class of the medical profession seem to be satisfied with a moderate ability. They are contented with the learning of the past. These are the doctors who fall "behind the times" after a few years; and they never overtake the more energetic contemporaries. When age overcomes them, their practice has dwindled away.

There should be no excuse for a physician in the city to grow negligent in reading the recent advances in medicine, since the organization of the St. Louis Medical Library. The world's best literature is kept on the shelves, and all of this is thoroughly indexed. In half an hour the essentials of any subject can be stored in the mental reservoir.

Then it is inconceivable what excuse physicians can have for not joining the Association. It is the best investment that can be made. It is already becoming the standard of physicians. Not to belong to the Association and to take part in the advantages of the library will be synonymous with ignorance.

The plea that you have not time, is simply a plea that you value

certain other duties or pleasures above that of higher education, and the profession will judge you accordingly. No home study can bring in so short a space of time what you can learn at the Library.

The St. Louis Medical Library Association still needs several hundred new members to fulfill all the obligations which it has assumed. It needs your support; do not withhold it.

MEDICAL RESEARCH.

Review of Progress in Physiology, Physiological Chemistry, and Experimental Medicine.

In Charge of

JOHN ZAHORSKY, M.D., A. S. BLEYER, M.D., and PHILIP NEWCOMB, M.D.

The Influence of Different Positions of the Body on the Motor Function of the Stomach.

The researches of Alexander Ogarkow on the influence of various positions of the body in relation to the rapidity with which the stomach empties itself of food have led to the following results (*Die Therapie der Gegenwart*, May, 1902): The stomach was found to empty itself quickest when the patient lay upon the right side and also during rapid walking. Slow walking, sitting down, the erect posture and lying on the left side are conditions almost equally unfavorable to the rapid emptying of the stomach. Between the two extremes, lying on the back and on the belly, occupy an intermediate position as regards the stomach movements.

Link (*Deutscher Archiv f. Klin. Med.*, 1901, Bd. LXXI) pursued similar investigations and arrived at the conclusion also that the emptying of the stomach takes place quicker when lying on the right side than on the left. Link, therefore deems it practical to make therapeutic use of this fact in certain well known pathological conditions of the stomach.

Two New Proteid Compounds of Metals.

The value of a proteid salt of silver depends on the amount of silver contained. Authorities agree also that the "organic iron" should be restricted to those compounds in which the characteristic iron test are not produced by certain reagents, otherwise they are inor-

ganic, and which are not proved to be merely albuminoids by precipitation with silver nitrate.

Barnes and Hille, after extensive research work, have announced that they have met the above conditions in producing two synthetic compounds of silver and iron; the former containing 30 per cent of silver and the latter being a true organic iron, unresponsive to MacCallum's hematoxylin test and not precipitated by a solution of silver nitrate, hence not an albuminoid.

The silver compound known as silver vitellin is a dark brown powder, containing 30 per cent of silver—twice the amount contained in any other silver proteid and about half the quantity in silver nitrate. It does not precipitate albumin or sodium chlorid, and thus lacks the coagulating effect upon mucous membranes possessed by the silver nitrate, and is not chemically changed by secretions.

It is also claimed that silver vitellin has an intensely penetrating action on tissues without, however, either causticity or irritation. The salt is extremely soluble—one ounce being completely dissolved in less than two drams of water.

The compound of iron known as iron vitellin is a red powder completely soluble in water, forming a clear red solution, tasteless, odorless and neutral in reaction. It has the formula $C_{47.81}H_{51}N_{17.14}Fe_8S_8O_{21.42}$. As mentioned above, iron vitellin contains no inorganic iron, is not an albuminoid and possesses the further advantage that it is not decomposed in the stomach—digestion with an artificial gastric juice for four hours at body temperature having failed to split off even a trace of iron. By animal experimentation Barnes and Hille demonstrated in addition, the greater facility of assimilation obtained by this compound in comparison with ferratin, iron peptonate, Blaud's mass, etc. There is three times more of iron vitellin absorbed and stored in the liver than of other forms of iron.

Both compounds are offered by the investigators for incorporation into the "United States Pharmacopeia."

Phthisis Pulmonalis as a Neurosis.

Modern treatment of tuberculosis of the lungs has its origin from the common understanding of the pathology of the disease—a definite local invasion by a demonstrable micro organism producing microscopic and macroscopic changes in the affected tissue.

The theory has been advanced, however, by Mays,¹ that the nerv-

ous system generally and the pneumogastric nerves in particular are implicated in pulmonary consumption, and the hypothesis has been put to a practical test by treatment designed to stimulate directly the nerves supposedly concerned in the causation of the disease. The pulmonary disintegration is stated to be secondary to the primary causative neurosis in the vast majority of cases.²

In pathologic confirmation of this theory it is cited that any influence or agent that has the power of undermining the integrity of the nervous symptom also has the power of generating consumption or some other form of pulmonary disease.

Herein lies the reason for the fatality of the disease in those subject to great mental strain, in the hysterical and the epileptic, the idiotic and the insane, as well as in those individuals whose nervous systems are weakened by the toxic effects of alcohol, lead, mercury and syphilis, or the toxins of infectious diseases.

Furthermore, those agents which have been clinically proven of greatest value in combating the ravages of the disease do so almost entirely by the support given the nervous system—such as strychnine, the hypophosphites, cod-liver oil, atropine, electricity, arsenic and the like.

The experiments of Zederbaum furnishes the basis for treatment of the disease, in elaboration of the theory that it is primarily a neurosis. These investigations³ proved that nerve energy is enhanced by pressure or irritation in moderate measures; excessive stimulation, however, being followed by inhibition. Again, the treatment which has been followed was suggested empirically by the benefits derived from stretching the vagus, as performed by Jabouly,⁴ in the severe cough associated with exophthalmic goiter and epilepsy.

Hence, for some time, Mays practiced massage and compression of the vagus through the tissues to bring about the desired end. Later, the idea occurred to introduce some active, yet conservative, irritant beneath the skin and directly over the course of the nerves to better furnish the desired stimulation.

In clinical support of this treatment there are advanced as comparative examples⁵ the influence of acupuncture and stretching of the sciatic nerve in sciatica and the application of a blister over the roots of the spinal nerves in herpes zoster and intercostal neuralgia.

In short, the treatment consists of repeated hypodermic injections

of a silver nitrate solution over the course of the pneumogastric nerve. Solutions having an average strength of 2.5 per cent and dosage of 5 minims was employed in over one hundred and fifty cases. In clinical confirmation of the value of this treatment it is stated,⁶ that of forty cases first treated 50 per cent are practically well at the end of one year and a half. From the whole number of cases a favorable influence was manifested in great part upon the appetite, general strength and weight, the fever, cough, expectoration, night sweats and physical signs. The following deductions are drawn :

1. That the best results are obtained in incipient cases, both in regard to the symptoms and physical signs.
2. That in most of the advanced cases the injections exert a beneficial, and in some instances an exceptional, influence upon the symptoms and physical signs.
3. That in the great majority of the far advanced cases the cough, expectoration and other symptoms are temporarily ameliorated, and in some instances the effects are apparently lasting.

In pursuance of the hypothesis that stimulation of the vagus exerts beneficial effect upon disease of the organs with which it is connected the injection treatment has been used with success by Mays⁷ in chronic bronchitis and asthma. If such means are proven to be of advantage in phthisis it would follow that their use would be beneficial in the bronchitis usually concomitant. But when the reflex character of asthma is considered a still more reasonable basis for the treatment is found in accordance with the theories of Zederbaum.⁸

Faulkener⁹ first employed counter irritation over the pneumogastric nerve in a case of asthma, as early as 1880, and the nitrate of silver injection treatment of Mays¹⁰ and Bass,¹¹ although in accordance with the neuropathic hypothesis above stated yet finds precedent in his empiricism.

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⁶Phil. Med. Jour., Vol. iv, No. 27.

⁷Ibid., Vol. ix, No. 25.

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¹⁰Phil. Med. Jour., Vol. ix, No. 25.

¹¹. bid.

The Eosinophiles in Pemphigus.

Coe (*American Medicine*) points out that the eosinophilic curve may be of prognostic value in pemphigus. The percentage of eosinophiles, according to his observations, running extremely high in favorable cases, and remaining surprisingly low in those of grave character. When the eosinophile increase in pemphigus fails to occur it denotes in a fairly certain way that some process exists which is complicating the case, for the simple reason that in any extensive skin involvement, be it pemphigus, eczema, or almost any other, the eosinophile increase is always very marked.

He points out two cases, one in which the eosinophile leukocytes increased to 51.8 per cent, the highest percentage that has been found in any disease save in the case of certain skin lesions (Lazarus reporting a case of urticaria where they reached 60.7 per cent). The case lasted nine months, was of typical relapsing character, and ended in recovery.

In the other case, which proved rapidly fatal, the eosinophiles reached at the highest 6 per cent.

Coe sees some meaning in the significant analogy between the eosinophile increase in pemphigus and the polynuclear neutrophile increase in other diseases, for example, in pneumonia, where such an occurrence is considered a favorable indication.

Functions of the Liver.

One of the vitally important functions of the liver lies in its power to absorb and destroy substances taken into the stomach that would be harmful to the organism. A great many of the drugs prescribed daily would cause serious damage to the body were it not for the protection afforded by the liver.

Arsenic is chief among the medicines in constant use that are so neutralized, and Deléage (*Rev. Med. du Canada*) points out that the iodid of potassium is another and very important one.

The following cases show that even small doses can result fatally in patients suffering from a disease-embarrassed liver:

A man, with a sclerotic and gummatous liver, who presented signs of hepatic insufficiency, received 30 grains of iodid of potassium per diem for three days, when there developed an enormous ecchymosis of the entire right posterior portion of the body and limbs, with marked cerebral symptoms. This same patient, a few days later, falling into

the hands of another physician who did not know the history of the case, received again iodid of potassium in about the same quantity. This time there occurred again, after about sixty hours, extensive ecchymoses, almost generalized. The subcutaneous hemorrhages being fairly large in several parts; abundant epistaxis, delirium and death.

A second case is mentioned, this one being a man suffering from hypertrophic hepatic cirrhosis, bronzed skin and edema, without albuminuria. The dose of the iodid was only 6 grains, repeated one time, and the result was a marked tumefaction of the parotid and submaxillary glands.

Antipyrin is also capable of causing grave symptoms when given to a patient suffering with some disease of the liver.

Two cases are cited of extensive edema of the face, fingers and vulva, with erysipelaform rash, and later followed by albumin in the urine, caused by antipyrin.

The Renal Origin of Urobilin.

The occurrence of urobilin in the blood is a great rarity. The presence of urobilin in the urine is frequent enough. In cases where the urine contains urobilin in any considerable quantity, examination of the blood will not reveal the presence of urobilin, but almost always of a large quantity of the bile pigments.

The conversion of the biliary products floating in the blood into urobilin by the kidneys is for the defense of the organism. Urobilin is very much less poisonous and very much more diffusible and is, therefore, easily eliminated. A retention of bile salts is a most serious matter.

Urobilinuria can exist independent of any derangement of the liver, but its presence evidences cholemia.

The diagnostic significance of urobilinuria has, therefore, a new side, since we have always looked upon it as pointing to one of the various causes of hepatic insufficiency.

DIAGNOSTICS.

New Signs of Organic Hemiplegia.

Babinski (*Gaz. de Hopitaux*; "The Practical Medicine Series") adds three new signs to our diagnostic aids in differentiating organic from hysterical hemiplegia. In organic hemiplegia involving unconsciousness and subconsciousness voluntary movements as well as the conscious, two phenomena are found, to which he has given the names of the "platysma sign" and the sign of the "combined flexion of the thigh and trunk." The first sign is seen in certain movements in which the platysma muscle takes part, particularly in the forcible opening of the mouth, and consists in a more energetic contraction of this muscle on the sound than on the paralyzed side.

The sign of combined flexion of the thigh and trunk is noticed when the patient is stretched out in a horizontal plane, that is, in dorsal decubitus, with his arms folded across his chest, and then makes an effort to assume the sitting posture, then there is a movement of flexion of the thigh on the paralyzed side, and the heel leaves the bed, while on the sound side the lower extremity remains motionless or else the flexion of the thigh and the raising of the heel appear very slowly.

The third sign is "exaggerated flexion of the forearm." In certain cases of organic hemiplegia, particularly in fresh and flaccid cases, if the forearm, placed in supination, is passively flexed upon the arm, so that arm and forearm come in contact, yet without causing pain, and if the same amount of force is used upon the two sides, it will be found that the degree of flexion is greater on the paralyzed.

The Telephonic Properties of the Inflamed Abdomen.

Peters (*Medical Record*, September 27, 1902), at the Canadian Medical Association, called attention to the fact that the heart-sounds are audible over the whole abdomen in cases of inaction of the bowel from inflammation of the peritoneum. He believes this is due to the distended bowel becoming one continuous acoustic tube, and not like in health, numerous pouches of gas separated by contracted intestine. The rigid abdominal wall also acts as a sounding-board.

Loss of Pharyngeal Reflex.

The loss of the pharyngeal reflex has long been described as a stigma of hysteria, and it has usually been given in descriptions of the disease as a valuable diagnostic aid. Strasberg (*Munch. Med. Woch.*, April 18, 1902), however, found this sign almost worthless. He examined this reflex in 123 cases of hysteria, and found it normal in the vast majority of cases. It was found absent only in about 11 per cent of the cases. Then the reflex varies so much in normal individuals that it may entirely disregarded in examining for the stigmata of hysteria.

How to Recognize Tuberculous Changes in the Apices of the Lungs.

The early recognition of tuberculous apical infiltrations is so important that a new and promising method of demonstrating the diseased part will be cordially welcomed. Stodlinger (*Phil. Med. Jour.*, September 13, 1902) proposes a method which probably has definite advantages. The rules are to map out accurately and mark the boundaries of the lung tissue at the apex by percussion. This gives a line encircling the neck, which is the inner border of the lung; and an outer line, which crosses the clavicle about its outer third and runs across the shoulder. After mapping out both sides he compares them by measuring with an ordinary tape, from a point at the acromio-clavicular articulation to where the inner border line crosses the shoulder. Then he measures from the same point to the outer line, and by subtraction the width of the apex resonance is obtained.

The exact figure of the normal width can not be given, it all depending upon the patient's size and figure, but about 4.5 to 5 cm. can be stated approximately. If one or the other side of this resonance is markedly narrowed, it indicates disease.

The Iliopsoas Bursa.

Lund (*Boston Medical and Surgical Journal*, September 25, 1902) writes on disease of this bursa and some of the symptoms produced. The bursa is situated between the psoas muscle and the anterior surface of the hip-joint and the rim of the acetabulum. Iliopsoas bursitis should be more often considered in the differential diagnosis of obscure tumors of the groin, and such a diagnosis should be possible in cases where the hip-joint is known to be diseased and a

tumor suddenly appears in front of the joint, under the anterior crural nerve and femoral vessels, which is very painful and tender, and perhaps gives to the palpating finger a sensation of deep fluctuation.

Bloody Stools.

The appearance of blood and mucus in a child's stool suggests at once the dreadful affection - intussusception. Yet dysentery will sometimes commence with a passage of almost pure blood. In both cases violent pains may be present in the abdomen. It may take observation for a few hours before the characteristic muco sanguinolent stools of the latter disease make their appearance.

In adults the most common cause of bloody stools is hemorrhoids; but it may come from ulceration or malignant disease of the rectum or bowel. In typhoid fever the blood may look very red or be tarry in appearance.

Chills in Typhoid Fever.

We are yet too prone to connect the occurrence of chills with malarial infection. A chill signifies a sudden and rapid rise in the temperature and may occur in any febrile disease. In typhoid fever, in which the changes in febrile movement are least abrupt, the chill is most commonly absent. And yet repeated chills have occurred in many cases of pure typhoid infections. Repeated chills in septic infections are exceedingly common, and hence a septic focus must always be sought when this symptom is irregularly repeated.

Signs of Fluid in the Chest of Children.

Koplik (*Medical News*) maintains that no diagnosis of the chest, when fluid is expected, is complete without an exploratory puncture. The pleural cavity may be full of fluid and still the voice and breathing will be normal, or very slightly diminished over the whole chest. Bronchophony and bronchial breathing with pleuritic râles may, in some cases, be heard over the whole of one side of the chest, the seat of the effusion. Of greatest utility are the percussion note, the fremitus and the displacement of the viscera.

Topical Diagnosis of Gastric Tumors.

Hitherto the topical diagnosis of gastric tumors has depended entirely on the method of outlining the stomach and careful palpation. Glaessner (*Berliner Klin. Woch.*, July 21, 1902) proposes an additional

means which may be of service when palpation gives no evidence on account of the thickness of the abdominal wall or the small size of the tumor. He bases his test on the physiological condition that rennet is principally secreted in the fundus. If both rennet and pepsin are markedly diminished, a fundus tumor is probably present; if the rennet ferment maintains a good ratio with pepsin, the tumor is probably pyloric.

The Iodin Reaction in the Leucocytes.

The reaction of certain polynuclear leucocytes, which has been termed iodophilia, have been studied again in a variety of diseases by Locke (*Boston Medical and Surgical Journal*, September 11, 1902). He found a very striking reaction in septicemia. In most cases nearly all of the neutrophiles showed the presence of the brown granules. In most cases of abscesses the reaction was positive, but it varied considerably in intensity. In suppurative appendicitis the test was almost uniformly positive. When no suppuration was present, the reaction was absent. All of forty-nine cases of pneumonia gave a marked discoloration.

In empyema invariably positive, in serous pleurisy negative.

In tonsilitis faint to a marked degree, according to the severity of the constitutional symptoms; in rheumatism, invariably negative. In typhoid fever it was positive in about half the number of cases, usually only when complications or pulmonary disease, furunculosis, hemorrhage or perforation are present. In gall-stones it is variable, depending on the presence or absence of toxemia.

In many cases it is a valuable diagnostic sign.

THERAPEUTICS.

In Charge of W. L. JOHNSON, M.D.

Nucleids of Iron, Copper, Mercury and Silver.

Larned (*Therapeutic Gazette*, September 15, 1902) hopes that chemistry will unlock the secrets of the so called immunizing agents, and show the exact nature of these valuable chemic bodies and pro-

that the ordinary compounds of the above metals are, as a rule, decidedly irritating and devitalizing. We know that certain metallic salts will enter into chemic combination with certain proteid substances, and recent investigations seem to have demonstrated that the leucocytes are the agents of absorption and transportation through the circulation of compounds of Hg, Ag, Fe, and Cu. Nuclein is that constituent of the cell by virtue of which that histologic unit grows; the nucleins are complex proteids, rich in phosphorus, which they contain in the form of nucleinic acid. These compounds are synthetic salts, containing the metals in true combination. They do not precipitate albuminous substances and are not precipitated by alkalies. Mercurol, 10 per cent metal; ferrinol, 6 per cent; nargol, 10 per cent and cuprol, 6 per cent. Larned closes with the following deductions:

1. These new salts of nucleinic acid are rational reconstructives, they are true tonics, they increase physiologic resistance, they increase the functional activity of the secretory organs.
2. They are powerful germicides, while not harmful but beneficial to the tissues.
3. If our present knowledge of nucleins and leucocytosis is correct, then the nucleid is the proper form for the administration of metals.
4. We do not positively know the rationale of their action, but we have nothing which holds out such prospects for successful medication.
5. These new synthetic salts are valuable additions to the pharmacopeia.

Cocain Ointment for Herpes Zoster.

Blenlek (*Neurolog. Centrablatt*) used a cocaine salve for the pain in herpes zoster and found the eruption promptly disappeared. A 1 per cent salve, with lanolin and vaselin, equal parts, is painted on in thin layers by means of a brush.

To Remove "Scales" from the Colon.

Perry (*Wisconsin Med. Rec.*, August, 1902) contends that like boilers the colon gets "clogged up." He uses a Cole's sigmoid irrigator, cotton seed oil or white rose neutral oil, crude oil or soapsuds. After injecting a pint or two of oil he injects as much hot water as possible, then attaches one cord of a faradic to the irrigator and one

to the wet pad placed over the abdomen, the current is turned on gradually, giving the patient all he can stand, at the same time the colon is kneaded and the abdomen manipulated.

Sometimes the oil treatment fails, when he resorts to the following irrigation, which is almost "guaranteed."

R	Sal Rochelle	ʒiv
	Glycerin.....	ʒiv
	Ol. turpentine	ʒj
	Aq.....	q.s. usually Oij

M.

Ichthyol in Rheumatism.

Post (*Ibid.*) uses ichthyol internally in chronic rheumatism. Ichthyol pure is applied over the inflamed joint in acute rheumatism.

Adrenalin Chlorid in Typhoid Fever.

Murbach and Foster (*American Medical Compend*, September, 1902) used hypodermically 10 drops adrenalin chlorid solution (1 to 5000) as a stimulant and internal styptic in a case of hemorrhage in the course of typhoid fever. Their conclusions, after the administration frequently in one case, are:

1. The heart was successfully stimulated when no result was obtainable from the drugs ordinarily used for the purpose.
2. The hemorrhage was lessened and ultimately controlled, since adrenalin produces a constriction of the peripheral arteries.

Migraine.

Aikin (*Journal American Medical Association*, August 30, 1902), excluding headaches from ocular and nasal abnormalities, believes that headaches are disorders of the nervous system, the cells withstanding the ptomaines until their cumulative strength causes an explosion.

Diuretics, diaphoretics and hydragogues assist elimination. The lower bowel should be emptied and normal salt solution injected high. Hot water should be drunk often during the attack and copious water drinking between the attacks lessen their severity.

Remedy for Earache.

A simple, harmless, infallible cure is as follows.—Make a small funnel of stiff paper, writing paper is good, saturate a ball of cotton the size of a hickorynut with chloroform and drop into the funnel, now

place the small end of the funnel into the ear, draw a long breath, then blow the breath into the large end of the funnel, the fumes of the chloroform are thus carried into the ear and all pain ceases at once.—*Health, May 24, 1902.*

Nasal Treatment of Dysmenorrhea.

Schiff's investigations go to prove the intimate relation between the so-called nasal genital spots on the anterior part of the lower turbinate bone and on the tubercula septi and the genital tract, and he made practical use of this fact by cocainizing the spots as a palliative treatment for dysmenorrhea. Out of 47 cases thus treated the pains were relieved in 72 per cent. A permanent cure may be effected by cauterization of the spots. The treatment consists in accurately locating the spots with a speculum and applying a few drops of a 20 per cent solution of cocaine.—“Practical Medicine Series,” June, 1902.

Salicylic Acid Administered Cutaneously.

Combemalle and Sigalas have called attention to the fact that if salicylic acid is mixed with some oily vehicle and applied to the skin, it may be detected in the urine in five minute. A favorite recipe is the following:

B	Acid salicylici	3ijss
	Alcoholis.....	3xijss (?) (3xijss)	
	Ol. ricini.....	3xxv

M. Sig.—Use locally. A tablespoonful of this mixture is poured into the palm of the hand and rubbed into the affected part for a few minutes; the part is then covered with oiled silk or rubber, and again enveloped in several thicknesses of flannel or cotton.

The effect is marked; pain disappears in a few minutes. If oil of wintergreen be substituted for the salicylic acid the effect will be still better.

Stengel (quoted from “International Medical Annual,” 1902) uses salicylate of methyl applied to the skin in the form of 10 to 20 per cent ointment covered with lint and oiled silk. He uses this in conjunction with internal administration of the salicylates and finds it more productive of relief than applications of lead water and laudanum, Fuller’s lotion and the like. Stengle also uses plaster casts in acute rheumatism; these almost invariably relieve pain by reducing the muscular spasm and securing immobility.

Cosma (*Ibid.*) uses salicylate of methyl internally:

R	Methyl salicylat.....	grs. 120
	Mucilag.....	grs. 2250
	Rum.....	
	Syrup.....	aa grs. 375

M. Sig.—This quantity to be taken in 48 hours.

The external use of salicylic acid in influenza, the remedy being applied in the form of aromatic salicylic linament or oil of wintergreen has been advocated by Bourget. He rubs the whole thorax with the preparation, then carefully covers the patient and in twenty or thirty minutes salicylic acid can be demonstrated in the urine. The author asserts that this procedure has the advantage that it disinfects the upper air passages, and during a recent epidemic he had excellent results from its use.—“Practical Medicine Series,” June, 1902).

Prescriptions.

Ointment for Rheumatoid Arthritis.

R	Extract belladonna.....	
	Extract opium.....	
	Extract conium.....	
	Extract hyoscyamus.....	aa gr. xv
	Lard	3ij

For Asthma.

R	Ethyl iodin.....	gr. v-xx
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Sig.—Thrice daily by inhalation

R	Spts. etheris comp.....	
	Tinct. opii camph.....	aa 3j

M. Sig.—One or two teaspoonfuls in water every half to one hour during paroxysms.

R	Ammon. iodid.....	gr. xxiv
	Ammon. bromid.....	3ij
	Ex. euphorbia, pil.....	
	Ex. grindelia robusta.....	aa fl. 3iv
	Mist glycyrrhizæ co.....	q.s. ad 3ij

M. Sig.—One dram in water four or five times daily.

R	Sodii arsenatis.....	3ss-j
	Aq. dist.....	3j

Sig.—Moisten unsized white paper and roll into cigarettes, each containing a quarter to one grain of the salt; two or three of these to be inhaled daily. (Bartholow).

For Bronchitis.

R Ammon. iodid.....	ʒj-ij
Ammon. carbonat.....	ʒij-iiij
Syr. Glycyrrhizæ.....	
Syr. Tolu.....	aa ʒij
M. Sig. - One dram every two or three hours. (Potter).	

The following is an excellent mixture for children.

R Potas. citras.....	ʒij
Syr. ipecac	fl.ʒij
Syr. scillæ.....	fl.ʒj
Syr. limonis.....	
Tinct. opii camph.....	aa fl.ʒij
Elix. simplicis.....	ad fl.ʒij
M. Sig. - One dram every two hours. (Hughes).	

For Bronchorrhea.

R Terebeni.....	fl.ʒij
Creosoti.....	m _L xxx
Acaciæ.....	q.s.
Aq. chloroformi.....	fl.ʒj
Syr. pruni virg.....	ad fl.ʒij
M. Sig. - One dram every three or four hours, diluted. (Hughes)	

Tri-State Medical Society of Alabama, Georgia and Tennessee.—The fourteenth annual meeting of this popular organization was held in Birmingham, Ala., October 7, 8 and 9, 1902, when a number of interesting paper were read and discussed.

The Etiology of Diarrhea in Infants.—It is announced that two medical students working under the direction of Dr. Flexner have definitely demonstrated that the *bacillus dysenteriae* Slhiga, which has been shown to be the cause of dysentery, is the principal etiological factor in the causation of the summer diarrhea of infants. If this work is corroborated, a new era in the treatment of this disease will commence.

Experimental Studies of Eclampsia.—Weichardt has been applying the principles of the biologic blood test, specifically prepared serums and resulting cytalysis, to the study of eclampsia. The results renders it highly probable that the elements of the placenta washed away in the blood liberate a toxin as they dissolve which induces eclampsia unless it is bound at once by some natural antitoxin or groups of receptors. Some individuals possess these natural defenses and others do not.

SOCIETY PROCEEDINGS.

MEDICAL SOCIETY OF CITY HOSPITAL ALUMNI.

*Meeting of June 5, 1902; Dr. Given Campbell, Jr.,
President, in the Chair.*

Dr. GEORGE GELLHORN read a paper (see page 336, this issue) entitled

Gynecologic Diseases Without Local Symptoms.

DISCUSSION.

Dr. GIVEN CAMPBELL said that this subject was of vital interest, both to the neurologist and to the gynecologist. Very much of what Dr. Gellhorn had said, had appealed strongly to him. He did not think that a woman with hysteria should be refused operative interference, admitting that there was something wrong in the pelvic regions. He believed, however, that there are many cases of hysteria operated upon needlessly. He wished to indorse what the essayist had said in reference to pressure-symptoms. He also thought that obstinate nervous conditions seeming to spring from the branches of the sacral plexus should be examined gynecologically and rectally.

Dr. WALTER B. DORSETT concurred fully in the point made by Dr. Gellhorn in his excellent paper. There was one affection which was not touched upon in the paper, and that was cystic degeneration of the ovary. In his experience, the speaker said that in many cases of neuroses, particularly hysterical trouble, there is present a cystic ovary. Versions are often found. He also agreed with the essayist in regard to fibroids. To illustrate this point, he related the case of a lady, aged 44 years, who was treated by three eminent neurologists of this city, one of Paris and one of London, for hysteria. She had vomiting; she had certain symptoms that should not have been overlooked; she had a fibroid tumor which she discovered herself—an intramural fibroid, requiring total extirpation of the uterus and ovaries. As soon as she recovered from the operation all her symptoms disappeared.

The speaker referred to the lashing which the gynecologists had received at the hands of the neurologists a few years ago on account of the "uterine tinkering" of which they were accused. He admitted that they were partially right at that time, because there was too much surgical treatment. There was no such a thing at that time as cautery or resection of the ovary; ovaries were taken out indiscriminately. In many cases they were not cured because removal of the ovaries did not replace a uterus which was in a faulty position. It is easy to understand that in a case of prolapsed ovary, with a retroflected uterus, removal of the ovary without replacement of the uterus will give no benefit. Many of the members of this Society, the speaker said, ought to remember the way the gynecologists were taken to task.

The speaker referred to a case of a young woman whose chief complaint was cephalgia and pain in the rectum. It was impossible to outline the ovary in this case. He found on the right side a peculiarly-shaped ovary which in shape reminded him of a crab. The ovary was removed and the patient recovered. That patient was under the care of a neurologist. If more neurologists paid better attention to the bimanual examination of these women it would be a step forward.

Dr. J. C. FALK said that physicians generally recognize the fact that uterine displacements cause reflex disturbances. He had adopted a rule that when a woman presented a train of vague symptoms apparently involving either heart, stomach, intestines, bladder or other functions, and these symptoms do not promptly yield to treatment, he then subjects the patient to gynecologic examination, with the frequent result of finding as a chief pathologic factor a retrodeviated uterus.

In such cases a correction of the malposition and its retention by means of pessary or other support usually relieves the reflex nervous phenomena. Any purely hysterical manifestations—coincident in some cases, will remain, thereby proving their distinct etiology.

He has noticed that of uterine displacements retroversion and reflexion are most frequently the cause of reflex neuroses. A further observation of his is that sterile women are relatively more often and with greater severity influenced by uterine malpositions.

Dr. HUGO EHRENFEST said that he would like to sum up all the conclusions made by Dr. Gellhorn in the one: The gynecologist ought to know something about neurology. Some have referred to

the uterus producing "nervous symptoms." He thought that the modern gynecologist should not be satisfied with the diagnosis "nervous disease." It makes a great deal of difference whether the patient is a neurasthenic or hysterical. Hypochondriasis is often found in gynecological patients who have been treated for some time. It is important to know what the clinical diagnosis is, both from a diagnostic and prognostic standpoint. In illustration thereof it is a well-known fact that local treatment continued for some time will do harm to the psychic condition of the hysterical woman, maybe more harm than it does good to the gynecological disease. It is a very unwise thing to promise neurasthenic patients that they will be cured after an operation. These patients can not be cured by an operation alone. These patients are weak and the weakness increases after the operation, and the subjective symptoms may become more accentuated. By removing the cause of the neurasthenia, however, there is more chance of curing this nervous state by proper general treatment. It is absolutely different with a hysterical patient. These patients are more apt to be relieved by removing the cause of their psychic malady, since their general condition may be good, and they are susceptible to suggestion.

Dr. FRANCIS REDER wished to speak on the question of constipation in connection with diseases of the uterus and adnexa where these organs give no definite symptoms as to any existing disease, when upon examination great pain was caused, revealing a strongly retroflexed uterus. He said in two such cases that had been relieved by operation, firm and extensive adhesions with the small intestine were encountered. The freeing of these adhesions relieved a distressing constipation that at times bordered on acute obstruction. In another case where numerous adhesions were freed from two cystic ovaries, which were removed, the patient recovered from a chronic diarrhea that refused to yield to medication.

He said no barrier could distinctly separate neurology and gynecology. The diseased condition of the uterus and ovaries often causing a symptom-complex that is chiefly neurological in character; again we find, not infrequently, that a disease of the nervous system may cause morbid conditions in the organs of generation.

With regard to the removal of the diseased ovaries to overcome some nervous condition, failure to replace in its normal position as near as possible a displaced uterus, may not bring about the looked-for

relief. Such an operation would invariably be looked upon as an incompetent operation. He stated that it had often occurred to him why an outflexed uterus did not call forth more nervous disturbances. It seemed that retrodeviations were the principle agents to excite those reflexes.

He agreed with Dr. Gellhorn as to the seriousness of the condition of the heart in such cases. He recalled a patient with a pulse rate of 130 to 140, with an apparently normal heart. Nothing abnormal was found after examining the organs of generation excepting that the depth of the uterine cavity was three and a half inches. This caused a suspicion of fibroid, which was verified a year later, when the tumor was distinctly palpable. The tumor was removed and six months later the heart's action was normal.

Several weeks ago the speaker removed a fibroid of very large size, filling up the whole abdominal cavity and reaching up to the diaphragm. Cardiac symptoms were most pronounced. He was very reluctant to operate but pressure symptoms caused such intense and continued distress that an operation became imperative. The patient died on the fifth day following the operation. Her death was undoubtedly due to an attack of syncope, of which she had a number. It happened at midnight; the patient was alone, so that the proper stimulation was not administered at a time when it was indicated. An autopsy revealed no evidence of sepsis, the healing of the wound having progressed most favorably. The heart musculature showed a very dark brown discoloration and atrophy.

Dr. GELLHORN, in closing, said he was gratified with the fact that Dr. Campbell could agree with him on the points made in his paper. If the neurologists at large would give up their extreme standpoint, the antagonism between the two specialties of neurology and gynecology would disappear.

Dr. Dorsett was referring to a hysterical patient in whom a cystic ovary was found. This ovary, of course, had to be removed, since there is no other way of treating such a condition. This patient may feel well after the operation, but the question arises, how long will she remain so. The psychic influence of the surgical interference upon the mind of the patient may bring her hysteria back to latency, but the essayist did not believe that hysteria could definitely be cured. There is always a possibility that a new accidental cause may revive

the hysteria with its long train of manifold symptoms. Consequently, though the operation in Dr. Dorsett's case was fully justified, the prognosis as to the future absence of hysterical symptoms is by no means certain. However, the essayist intended to lay special stress upon reflex symptoms of gynecologic diseases in non-hysteric patients. In these an operation, such as extirpation of a cystic ovary, will produce a complete and lasting cure.

In reference to Dr. Reder's remarks on cardiac reflex symptoms produced by fibroids, the speaker recalled that among others, Alban, Doran and Fieux have also reported cases in which, after the removal of a fibromatous uterus, the pulse, previously very intermittent, became and remained perfectly regular.

As regards Dr. Falk's question the essayist thought that sterility may have such a depressive influence upon the mind of certain patients that mental equilibrium is disturbed. Then the primary gynecologic disease, viz., the uterine deviation may act much stronger upon such an individual than upon an otherwise healthy patient.

Dr. N. H. CHAPMAN presented patients (see page 267, this issue) showing the effect of

Treatment of Epithelioma by X-Rays.

DISCUSSION.

Dr. BRANSFORD LEWIS asked what effect this treatment has upon cases of chronic phagedenic chancroids.

Dr. CHAPMAN said that there are one or two cases of cancer of the tongue which have been treated and have given fairly satisfactory results. The good effects to be obtained in a treatment of this kind depends upon the technic. One subject may be more ingenious than another in getting the rays into the mouth.

In reference to Dr. Reder's question as to what becomes of the tissue given off in this treatment, he stated that it is probably carried off in the lymphatics except where open sores exists. Some of these patients get along well and then suddenly show evidences of toxemia. If this is true then the x rays can not be depended upon altogether. It is necessary to get the patient into as perfect a physical condition as possible.

BOOK REVIEWS.

The Courier of Medicine Company will mail, postpaid, any book reviewed, on receipt of price.

The Principles and Practice of Gynecology for Students and Practitioners. By E. C. Dudley, A.M., M.D., professor of gynecology, Northwestern University Medical School; gynecologist to St. Luke's and Wesley Hospitals, Chicago, etc. Third edition, revised and enlarged, with 474 illustrations, of which 60 are in colors and 22 full page plates in colors and monochrome. Octavo, 756 pages. Price, cloth, \$5; leather \$6, net. Lea Brothers & Co., Philadelphia. 1902.

The pronounced feature of this revision is found in the method of presenting etiology, pathology, symptomatology, physical signs, diagnosis and differential diagnosis. These topics are given in the condensed form of tables and parallel columns, which is very helpful to students, but which will not please the practitioners. The arrangement in parallel columns makes dull reading. Yet a thorough classification is always valuable and the subjects are well arranged throughout the volume. The principal object is that the practical shall be above the theoretical.

Too much praise can not be written on the beautiful illustrations.

Physicians and students will find much help in studying the chapter on general diagnosis; it is thorough and complete. We are glad to find a good article on the examination of the urinary organs, especially the bladder and ureters. This subject has not been sufficiently elucidated in the common text-books on gynecology.

The technic of curettage is so plainly described and the steps of the preparation illustrated, so that the student will have no difficulty in grasping the subject.

Pelvic cellulitis, an affection not usually discussed in text-books, receives careful attention.

Much space is given to the elucidation of suppurative salpingitis, a disease which the general practitioner overlooks.

In part six, the disorders of menstruation and sterility receive due consideration.

Altogether the subject matter is very complete, as much as is found in very large volumes, and the practitioner will find it very satisfactory. For the student there is no better text-book.

The Diseases of Infancy and Childhood. By L. Emmett Holt, M.D., LL.D., professor of diseases of children in the College of Physicians and Surgeons, Columbia University, New York; attending physician to the Babies' and Foundling Hospitals, New York; consulting physician to the New York Infant Asylum, Lying-in Hospital, Orthopedic and Hospital for the Ruptured and Crippled. Second edition, revised and enlarged, with 225 illustrations, including 9 colored plates. Price, \$6. D. Appleton & Co. New York. 1902.

This second edition of Holt's work, we take it, requires no introduction of a laudatory kind. Indeed, this work is looked upon by the profession as the book—the standard book on pediatrics. It is the text-book for the student. The arrangement and treatment of the various chapters is practically the same as in the first edition; the increase in size of the book is due to a larger discussion of infant feeding, and to a lengthier consideration of the pathology of infantile disease.

Ulcero-membranous tonsilitis, due to the fusiform bacillus of Vincent is described. Glandular fever as an entity is not discussed.

Practical Midwifery. A Manual of Obstetrics for Students and Physicians. By Edward Reynolds, M.D., assistant in obstetrics, etc., and Franklin S. Newell, M.D., assistant in obstetrics and gynecology in Harvard University Medical School, Boston. In one octavo volume of 531 pages, with 253 engravings, and 3 full-page colored plates. Cloth, \$3.75, net. Lea Brothers & Co., New York and Philadelphia. 1902.

The authors believe that the general principles of a subject are rendered more intelligible and interesting to the student when presented in connection with the practical details of bedside work. The authors' purpose has been admirably fulfilled. Special value we may assign to the section on the functional disorders of pregnancy. The chapter on intercurrent diseases of pregnancy and obstetrical complications of pregnancy is complete and to the point.

The value of the work is not hampered by the discussion of debatable obstetrical questions, but the directions given are those which the authors have found most advantageous.

We like the work, it is certainly up-to-date, it is exceedingly practical, and for the student and practitioner will make a very useful guide.

A Pocket Text-Book of Materia Medica, Therapeutics, Prescription Writing, Medical Latin and Medical Pharmacy. By William Schleif, Ph.G., M.D., instructor in pharmacy in the University of Pennsylvania. New (second) edition, revised and enlarged. In one 12mo volume of 382 pages. Lea's Series of Pocket Text Books. Edited by Bern B. Gallaudet, M.D. Cloth, \$1.75; limp leather, \$2.25, net.

This is a commendable manual; the arrangement is excellent; much that is recent is incorporated briefly, yet intelligibly. Dietetics is given a place, the composition and value of various food stuffs dealt with and a chapter is given to diet in disease. Imponderable remedies as light, heat, cold, etc., are briefly considered, the main part of the work is devoted to pharmacological remedies. A therapeutic index of new remedies, such as adrenalin, mercurrol, etc., is an excellent feature.

The Menopause. By Andrew F. Currier, A.B., M.D. D. Appleton & Co., New York.

This, in the author's words, is a consideration of the phenomena which occurs to women at the close of the child-bearing period, with incidental illusion to their relationship to menstruation; also a particular consideration of the premature (especially the artificial) menopause. The work merits a study by all interested in the subject.

It is a very thorough treatise, full of statistical information and is calculated to correct many pernicious ideas concerning the evils attributed to this period.

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ORIGINAL CONTRIBUTIONS.

An Infectious Form of an Eczematoid Dermatitis.

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ST. LOUIS, MO.,

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HERE is a catarrhal inflammatory condition of the skin which, to me, seems to be a distinct clinical type; distinct through its etiologic factors, objective symptoms and clinical history. In all of the text-books it is included in the eczema group, under the name of eczema impetiginoides, impetigenous eczema and, sometimes, scrofulous or tuberculous eczema.

Since the idea of the parasiticity of eczema was brought so prominently before the profession by Unna in 1890, the rôle of micro-organisms in that group of affections has been energetically investigated by many observers, with the result that there is at present some confusion as to just what is meant by the term eczema. This is the battle ground, as Brocq says, of modern dermatology: Whether eczema is a purely vesicular disease or should the term include various other forms of

inflammatory lesions and catarrhal conditions. The brunt of the discussion hinges upon the fact that the majority of investigators have found the primary vesicle sterile, while all of them admit the important pathologic rôle played by staphylococci later on in the process. Through this confusion of names and what is meant by them, and since modern bacteriologic investigation has not isolated the specific organism of the eczema vesicle and the common forms of eczema, we are, therefore, forced to take seriously the definition of Norman Walker: "Eczema is the term used to designate all inflammations of the skin, whether moist or dry, of which the observer does not know the cause or nature."

From these few remarks you will see our wisdom in speaking of the condition which we will attempt to describe, as a dermatitis; an eczematoid dermatitis, because in its course we have pruritis, vesicles, pustules, a reddened scaly surface, from which oozes a sticky liquid that stiffens linen. I can not introduce the description of this condition in a clearer manner than by quoting from a few histories of cases seen in private work and at Dr. Hardaway's Clinic for Cutaneous Diseases at the Polyclinic.

CASE 1.—Mrs. J., aged 29 years; clinic case. Upon the index and second fingers of the right hand, and upon the web between these fingers was a sharply-defined, red inflammatory surface, which was weeping and scaly, the border was undermined, that is, at the progressive or peripheral border, the epidermis was slightly lifted or split-up; over certain portions of this surface were small vesicles which ruptured and oozed a sticky serous fluid.

The patient's son had a discharging sinus upon his foot, which she dressed daily. He also had a similar eczematous condition about this wound. The trouble upon the patient's hand began as small vesicles. The clinical evidence of infection in this case is too strong to be overlooked.

CASE 2.—Miss C., aged 17 years; private case. This young lady while sewing stuck a needle obliquely through the skin of the tip of the right index finger, making a wound which "festered" and became quite inflamed; from this infected wound there spread upward to the first joint an inflammatory condition similar to the one for which she came for advice. Upon the scalp were numerous patches of what would commonly be called an impetigenous eczema. The skin over the

last phalanx of the left index finger showed at the consultation signs of recent inflammation, the nail was raised from its bed, was discolored and deformed. The patient stated that she had scratched or rubbed her scalp with the "sore" finger and thought she had probably inoculated herself in this manner. Her brother, a boy, aged 8 years, was brought for treatment at the next consultation. He had a patch of eczematoid dermatitis upon the chin, left cheek and left side of the neck, consisting of reddened, sharply-defined, crusted areas, ranging in size from a silver quarter to that of a half-dollar. The brother and sister had used the same towels and had occupied the same bed, taking no precautions as to pillows, linen, etc. The brother's affection had appeared sometime after that of the sister.

CASE 3.—Mrs. R.; private case. The patient's baby, an infant, aged 9 months, had an eczematoid dermatitis upon the upper lip, chin and both cheeks. The disease began by a discharge from the nose, which infected the upper lip and spread from thence to the other points. Upon both breasts of Mrs. R., about the nipples and extending beyond the areola was an eczematoid surface of a dry, scaly type, with sharply-defined, undermined borders. The patient had noticed the eruption upon her breasts some weeks after that of her baby, which she had nursed only twice daily. Here the evidence of direct infection is perfect.

CASE 4.—Mr. S., medical student. Upon the dorsum of the patient's left foot is a weeping inflammatory surface, rather serpigenous in outline, with sharply-defined border and undermined epidermis. A dry, scaly patch of the same type but not so inflammatory in character was located upon the right buttock. Some weeks previously, Mr. S. had remained all night at a country inn where he was obliged to share his bed with a fellow traveler. Upon undressing this stranger had complained of an itchy eruption upon his foot, which Mr. S. examined and pronounced eczema (?) The disease began in Mr. S. upon the foot.

CASE 5.—J. H., aged 22 years; clinic case. Upon the right side and in front of the neck just where the collar rubs, was an eczematoid surface, which at times discharged. The man was not at all cleanly, wearing his collar several days about a neck equally as dirty. He stated that an unusually rough or frayed collar started the trouble. On the back of

the right hand, beginning at the base of the first and second fingers and running upward toward the wrist for three inches was an eczematoid surface, probably an inch or so broad. The patient voluntarily stated that he had constantly applied this portion of his hand to the discharging surface upon the neck.

CASE 6.—H. K., aged 14 years; clinic case. Two weeks ago a few grains of emory powder flew into the left eye, which was followed in two days by a severe conjunctivitis and pustular discharge from the eye. The day following the appearance of the discharge both lids became itchy and inflamed at their margins. At the consultation the entire external surface of both lids were reddened, scaly and eczematous, while upon the cheeks and forehead were several red, scaly spots the size of a pea to a dime.

CASE 7.—I. L., aged 22 years; clinic case. A month ago the patient had measles, during which her throat became very sore. At the consultation both her mouth and throat seemed slightly reddened; upon the left corner of the lip, extending downward over the chin and adjacent portion of the cheek was an eczematoid eruption of the type already described, but thickened and crusted. The patient slept upon her left side; during her sleep a stream of infective saliva dribbled over the skin of that side, thus, no doubt, exciting the dermatitis.

CASE 8.—M. Z., aged 2 years; clinic case. The child's nose began to discharge two or three weeks ago, which infected the skin of the upper lip; after this the eyes became sore, then the disease for which she consulted us appeared upon the scalp and face. The patient's nostrils were filled with greenish impetigenous crusts, the eyelids were inflamed and crusted over half their surfaces. Scattered over the face were a number of inflammatory areas, which were at first vesicles upon a reddened base; these when isolated crust and heal (impetigo?) but when they occur in clusters, as it were, or are situated close together, an active process ensues, by their coalescing into a weeping, progressive eczematoid patch. Upon the occiput was such a patch, larger than a silver dollar.

CASE 9.—R. R., aged 2 years; clinic case. The disease began five months previous to consultation, as a discharge from the ear (due to middle ear disease), inducing an eczematoid condition of the external ear and the skin just behind it. The nose began to discharge one month ago, succeeded by infection of the upper lip. At the consultation the eczematoid

condition was located upon the left ear, just behind it, upon the scalp, about the nares and upper lip.

Only these few histories have been cited to illustrate several methods of inoculation of the process and types of the affection; more clinical evidence of a similar character could be given were it necessary for the purpose. In Dr. Hardaway's Clinic, out of twelve hundred new cases, 35 have been of this type (about 3 per cent), presenting various forms of eczematoid dermatitis, each with a history of inoculation or auto-inoculation from a pustular discharge or an eczematoid surface.

From the above cases you can discern that we wish to call your attention to a condition which is, from clinical observation, apparently infectious; it is characterized at the height of its process by a crusted, weeping or scaly inflammatory patch, or patches, which may extend at its periphery by the formation of vesicles, pustules or vesico-pustules, but more commonly by the splitting-up or undermining of the peripheral epidermis, producing sensible or insensible weeping which forms a scaly, crusted or discharging surface, as it progresses, dependent, probably, upon the particular chemotactic power or character of the organism and the reaction of the patient's tissues. There is never any attempt here to central involution as in many other dermatites, as in, for instance, impetigo circinata. From a close study of this type of disease, a vesicle, pustule or erythematous, scaly, crusted or weeping spot seems to be the primary lesion. These points may coalesce into a patch if closely placed or individually spread from this individual point. When the dermatitis has been too energetically treated, irritated, or if the infection is of great serotactic power, a condition indistinguishable from an eczema rubrum of the ordinary type supervenes.

In these cases, if the patient be carefully questioned, generally a history of trauma or infection can be elicited. The trauma may be in the form of a blow, surgical wound, bite of insects (pediculosis), irritation of a simple pimple, chemical or thermal irritation, scratching (especially in complication with lichen tropicus); in fact, anything which may break or render the epidermis vulnerable.

The most aggravated form of this dermatitis often occurs after a surgical or accidental wound, as a rapidly-spreading discharging surface, extending with sharply-defined irregular

borders over great areas of skin, undermining or raising the peripheral epidermis by the attraction of a seropurulent discharge, from an eighth of an inch to three inches from the denuded surface border; thus, in a few days to as many weeks denuding the whole of the hand or foot of its epidermic covering. There is sometimes in these virulent cases slight edema of the subjacent tissues. The denuded surface is covered by a sticky seropurulent discharge, which oozes from points and forms, where not too profuse, into thin crusts. This fluid teems with a pure culture of the white or yellow staphylococcus and can be pressed out, when profuse, in drops from under the undermined epidermis at the border; but when it is not so freely attracted the disease progresses slowly, with just enough moisture to detach the peripheral epidermis which unites with it and the débris to form crusts upon the reddened surface. The epidermic cells are swollen, the nuclear cavities widely dilated, the prickles stretched to their utmost; the soggy tissue raised by the discharge is soft, of a dirty, creamy-white color and breaks upon slight traction, thus it can be readily stripped off flush with the apparently healthy skin.

In this type of the dermatitis vesicles or pustules do not form as the organism's chemotactic attraction is so powerful that the epidermis becomes soaked, then lifted up *en masse*, as it were, and is washed or broken away before the flow of serum, which thus actively attracted also prevents the formation of crusts to any marked extent.

The similarity between this rapidly-spreading eczematoid dermatitis and Crocker's "dermatitis repens" is at once obvious; the clinical picture is the same according to his description—both start from a wound, but a case seen last spring illustrated the fact that it can follow the irritation of a patch of eczematoid dermatitis of the type most commonly seen: A lady consulted me on account of patches of eczematoid dermatitis of the dry scaly chronic type on the fingers and back of the left hand. A sulphur and balsam of Peru salve was ordered. The second day following she returned with her hand almost denuded of epidermis, by the extension of the individual patches in the manner just described. The appearance of the disease had entirely changed. Lassar's paste was ordered. Upon her return in twenty-four hours the disease had progressed almost to the wrist. The soggy epidermis was removed, a bath of hot water reddened pink with permanga-

nate of potash was given, and the hand finally dressed in a moist poultice of acetate of aluminum. This treatment was continued with minor modifications for two weeks, when the patient was dismissed well. During this time she came to the office daily for a proper dressing, necessitating a daily manipulation and cleansing of the surface.

At this time there appeared upon the end of the palmar surface of my index finger a large, flat—very flat, bulla, or white area which, upon rolling under my thumb seemed to contain fluid, but upon pricking and tearing off the easily detached epidermis was found to be merely moist. For purposes of study this apparently infected patch was let alone, but as it began to spread, further study was cut short by an application of pure carbolic acid. Before puncturing the seemingly unbroken epidermis it was washed with alcohol and cultures taken in the usual manner, from which a pure culture of the white streptococcus resulted. This coccus was also found in pure cultures from the patient's hand.

An old lady, aged 80 years, came to the Polyclinic for an eczematoid dermatitis of the fingers of both hands and disseminated, small, sharply-circumscribed patches over the body, arms, legs and thighs, which had existed for some weeks. She had the condition first upon the finger-tips (the nails were deformed, split-up and partially raised from the nail-bed). She had had a great deal of general pruritis and was constantly rubbing or scratching herself. A mild sulphur salve was prescribed, which irritated terribly, starting up an active, uncontrollable spreading dermatitis, which soon involved the whole body, through peripheral extension of the old patches by lifting up or undermining the epidermis and the formation of new ones. Rigors, sweats and temperature accompanied the process from absorption of toxins. A collapse was feared, and vigorous supportive treatment administered. The picture was strikingly suggestive of a moist dermatitis exfoliativa (Devergie).

After trials of various external remedies, a 3 per cent ointment of menthol gradually increased to 5 per cent, effected a cure. Sulphur, in the form of a salve is dangerous in all cases of eczematoid dermatitis, but when combined in a paste is often wonderfully beneficial.

Cases similar to 5, 6, 7, 8 and 9 you have all frequently seen. Many of them are referred to the skin department from the eye, ear, nose and throat clinics. It is a common occur-

rence, according to our observations, for the discharge from an inflamed eye, ear, mouth or nose to infect the adjacent skin surface and from thence to be extended by autoinfection to more distant points. The reverse may occur and can be verified by careful observation, namely—a catarrhal condition of the mucous membrane of the above-named parts is not infrequently induced by infection from an eczematoid condition. Dr. Hardaway ("Manual of Skin Diseases," 1898) calls attention to the frequent occurrence of marginal blepharitis and eczema of the scalp.

Many of these cases, during or after the acute exanthemata, are infected from an inflamed throat or mouth; the patient, while asleep, places the head in such a position that drainage of the infected saliva occurs through the open mouth, thus the saliva dribbles over and infects that portion of the skin or cheek corresponding to the side upon which the patient is in the habit of sleeping.

The infectiousness of this process was beautifully illustrated among the babies at the Bethesda Foundlings' Home during the summer of 1900. Several of the little inmates became infecten with scabies, and through the irritation of the itch-mite and scratching, an epidemic of staphylogenetic infection was started, consisting of impetigo bullosa, boils and eczematoid dermatitis, which was far more difficult to combat than the scabies; in fact, it continued for some months after the latter disappeared. Several members of the medical staff, besides myself, were interested and careful observers of the condition, all of us agreeing as to its infectiousness and apparent etiology.

About this time catarrhal conditions of the ear, nose and eye became prevalent and many of the children had dermatitis with these complications. Of course, the natural query would be: Did not all the children with the dermatitis have scabies, and did not the latter induce the former? These cases were seen almost daily, and carefully inspected, therefore we can state as positively as clinical evidence and our knowledge of scabies lesions will allow, that the majority of the children with staphylococcic infection did not have any symptoms of scabies whatever. It was only by strict isolation that the infection was checked. Children with discharging eye, ear or nose, as well as those with dermal lesions, were isolated.

It was of great interest and instruction to study the various degrees and varieties of the infection—boils, bullous impetigo, Bockhart's impetigo, circinate impetigo, and different varieties of eczematoid dermatitis, from the majority of which we obtained one or both forms of the staphylococcus (yellow or white). Streptococci were found in only one case of bullous impetigo and three of dermatitis, but not in pure culture. The cultures were taken with great care, and in the cases of the dermatitis from the earliest lesions (vesicles) or crusted spots; from the surface of the latter, after removal of the crusts, thus pure cultures were almost always obtained.

To get the fluid from the vesicles or pustules, sterilized capillary tubes were generally used. During the summer of 1900, the weather was very hot and sultry. Dispensary and private practice presented a greatly increased per cent of staphylococcal infections, therefore many cases were carefully studied.

The pure impetigo group was far more infectious and, therefore, more prevalent than the dermatitis. In several instances it was noticed, especially in the circinate forms of impetigo, where certain patches failed to undergo involution in the center, that this patch became characteristic of eczematoid dermatitis,¹ but where infection could be traced, as in institutions and families, impetigo seemed to reproduce impetigo, and dermatitis its autotype. From this fact, type seemed to be more a question of the chemotactic character of the organism than the nature of the soil. Another factor which probably has its influence, is the depth of the accidental inoculation; the eczematoid condition being a deeper process than impetigo; this seems to be further verified by the fact that glandular enlargements occur frequently in the former and rarely in the latter condition.

In the dermatitis type the inter-epithelial lymph channels are all widely dilated by a slowly-progressive serotaxis, while the parakeratotic horny layers give the infected fluid slow and partial exit or drainage, thus more absorption takes place with adenopathy.

In the impetigo type serum attraction comes suddenly, as a sudden blow, lifts the comparatively unchanged horny layer and a few cells under it, into a chamber of various sizes (vesicle or bulla) which, when filled to its capacity, breaks or is accidentally broken, giving free drainage, removal and cure

Therefore, the particular characteristic virulence of the organism may, by the slower action or chemical character of its toxins, produce parakeratotic changes and thereby difference of clinical type, namely, quickly active toxins, impetigo vulgaris, impetigo bullosa; less quickly active, impetigo circinata; slowly active, eczematoid dermatitis, which presents the histologic features of an eczema.

The personal equation is a factor, no doubt, in this production of type, but not of such importance as the special chemical reaction of the organism, judging from clinical observation and a few inoculation experiments. This difference in the clinical appearances of a group of diseases can thus be more satisfactorily explained than by hunting for an unknown special organism as a solution.

Two cases in particular will, in a manner, illustrate this fact. These were babies at the Bethesda Foundlings' Home, who had a severe dermatitis of the diaper region, which spread beyond this region (diagnostic of syphilis in most text-books), involving the soles of the feet, inner and posterior surfaces of the thighs and legs, buttocks, genitalia, extending to more than half way between the pubis and umbilicus. This condition consisted of a slightly-infected, reddened skin, with undermined or scaly borders, spreading slowly by peripheral extension, leaving a reddened inflammatory surface in its wake, with just enough edema to cause mild parakeratosis and the formation of a few small scales, which were constantly removed by the urine, wet diaper and washing. The influence of these various factors, together with the mild edema in the derma and deeper layers of the epidermis, gave to the stretched and freshly-washed horny layer a shimmer, which is said to be characteristic of a syphilitic erythema in this region. In fact, these cases were diagnosed as lues and received sufficient specific internal treatment to improve the condition, if luetic, but without result. Upon the institution of a sulphur paste it disappeared in both cases with marvelous rapidity. These two were the most pronounced, but several milder cases of the same type occurred in this Home.

Given an infant with discharging nose and a dermatitis so located, with such characteristics, the improper diagnosis of lues would probably be frequent, especially in these little waifs, who are bottle-fed, and often delicate. But how much this diagnosis means to the future of such a child! With the stig-

mata of syphilis in its history, interfering with its adoption—its greatest opportunity for worldly redemption.

The association of eye, ear and nose complications with "eczema" has often been referred to by various authors. The English place stress upon a "scrofulous diathesis" in these cases, but in my experience there is no such evidence; possibly it does occur more frequently in the crowded and poorly nourished, but infection is the prime factor. The odious habit of picking the nose, so common in children, is no doubt a common cause in many instances.

Unna's "tubercular eczema" probably belongs here. Unna thought he found improvement from injections of tuberculin, but as Crocker says, "tuberculin may modify various forms of unstable tissue." Unna differentiates this type of dermatitis from his seborrheic type by the latter skipping the orbits and spreading down upon the face and body.

Crocker makes a most positive statement in his text-book by saying that the condition here referred to (our eczematoid dermatitis) is "nothing more than a dermatitis excited by contagious pus," which entirely concurs with the writer's experience, but he goes on to say that it is a form of "contagious impetigo." Just upon this point, of course, hinges the question of nomenclature. If by the term impetigo is meant a disease, characterized by the formation of a pustule or vesico-pustule, which dries into a crust (Fox), or spreads peripherally and involutes in the center (Unna), then the disease under discussion is not an impetigo, because it occurs in patches and not as isolated phlyctenules, which crust and heal. Furthermore, it shows no inclination to central involution; on the contrary, produces, as a rule, eczematoid surfaces, often difficult to heal.

Staphylogenetic eczematoid dermatitis is characterized by the following points, many of them differentiating it from eczema in the more limited acceptation of the term:

1. It occurs in patches, usually not involving a large area of surface in a single patch.

2. The patches are circumscribed, with sharply-defined borders. The epidermis at the periphery is usually undermined, split up, detached or raised. The two latter events are caused by perceptible or imperceptible serous or seropurulent fluid, which may, if containing much fibrinous material, instantly form a thin ridge-like crust about the periphery, while, if in

larger amounts and more fluid, drops of it can be pressed out from under the raised epidermis.

3. The disease increases by peripheral extension of the patches and by autoinoculation.

4. The exposed parts are most frequently affected.

5. There is no attempt at central involution.

6. There is no symmetry in the arrangement of the lesions, except when thus accidentally inoculated.

7. There is a minimum amount of pruritis.

8. The nearest lymphatic glands are often enlarged.

9. The initial lesions may be a vesicle, pustule, erythematous, scaly or crusted point.

10. The initial and earliest vesicle, pustule, scaly or crusted spot, contains the yellow or white staphylococcus in pure culture, which are also found upon the surface and upon the crusts of the later patches.

12. Experimental autoinoculation can be usually successfully performed. The experimental patch never produces vesicles, but an erythematous, scaly, weeping and crusted surface.

13. The history of infection or trauma is characteristic of the affection, also its frequent association with suppurative conditions.

14. Local antiparasitic applications are sufficient to effect a cure.

The rôle of micro-organisms, really staphylococci, in eczema has been investigated by Gilchrist,² Scholtz and Raab,³ Kreibich,⁴ Frédéric,⁵ Brocq,⁶ Veillon,⁷ Unna,⁸ Sabouraud,⁹ Benda, Bockhart, V. Gerlach,¹⁰ Galloway and Eyre.¹¹

The subject has been thoroughly discussed by these gentlemen and many of their publications are so recent that it is not necessary here to dwell upon them in detail. As has been mentioned, they all, with the probable exception of Unna, have admitted that staphylococci possibly play an important rôle in eczema, especially in its latter manifestations. Scholtz and Raab go so far as to state that the common type of eczema can not exist without these cocci. Sabouraud has coined the term "impetiginization," and Besnier, "eczematization," probably to express this production of a common type of cutaneous catarrh, apparently caused by the "local invasion of common microbes."—Jadassohn, upon a certain condition

which is supposed to be the true eczema, in which the vesicles have been found sterile by the majority of investigators.

Benda, Bockhart and V. Gerlach conform these conflicting views as to the sterility of the primary eczema vesicle by stating that all the healthy skin follicles contain staphylococci in an inactive form, which are awakened into activity or pathogenicity by some cause acting from within or without; thus from this increased metabolism the cocci excrete a staphylo-toxin, which diffuses itself from the follicle into the epidermis, where it displays its serotactic influence by the formation of vesicles and papules, which contain serum and almost no staphylococci; therefore, they remain for a certain length of time sterile, but later on the cocci increase and are readily found.

Unna's morococcus is, no doubt, a form of the white staphylococcus, as has been so satisfactorily demonstrated by the experiments of Galloway and Eyre,¹¹ and others.

Cedercreutz,¹² from his work in Sabouraud's laboratory, believes that the morococcus of Unna, the micrococcus cutis communis of Sabouraud, and the staphylococcus epidermidis albus of Welch, are one and the same cocci, and that cocci producing yellow cultures and those producing white or grayish are probably artificial and *does not exist in actual fact*. He calls this coccus, with which he has been working, "a polymorphic coccus, the habitual denizen and parasite of the human skin."

The result of our own investigations in the form of eczematoid dermatitis under discussion we will give below. These studies have extended over several years, not in one continuous series but in several series and epidemics, at different times. Not to tire you with the details of these investigations, which we hope to give later in a complete report, we will merely enumerate here the basic or principal results, namely:

1. The contents of the initial vesicles, serous and seropurulent discharge, the under surface of crusts and freshly-denuded surface of eczematoid skin, produce, when inoculated into artificial media, pure cultures of the yellow or white staphylococcus, or both.

2. When the apparently healthy skin of a person suffering from eczematoid dermatitis is slightly irritated, after being rendered sterile by proper means, and then inoculated with the discharge from the eczematoid surface, there appears a condi-

tion thereon similar in its flora and symptoms to the one from which the discharge was taken. Inoculation experiments from individual to individual have not been encouraging, most probably on account of the patient's unwillingness to properly submit or the reaction of the foreign soil.

3. Inoculations from artificial cultures upon individuals were not very successful. The organism must undergo some change in its chemotactic character in artificial media, as inoculations from this source invariably produce impetigo or quickly-healing impetigenous lesions.

4. The suppurating conditions with which eczematoid dermatitis is so often associated, always contains staphylococci.

5. The association with suppurative conditions, history of apparent infection and autoinfection; the exciting factors of traumatism and infection; the bacteriological findings above enumerated, tends to confirm our belief in the staphylogenetic origin of this dermatitis.

REFERENCES.

¹In article by me entitled "Impetigo Contaginosa Bullosa and Its Bacteriology," (*Journal of Cutaneous and Genito-Urinary Diseases*, April, 1901, page 181) this fact is noticed.

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³Annales de Der. et de Syph., 1900, page 409.

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⁵Munch. Med. Woch., 48 Jahrg., No. 38.

⁶Annales de Der. et de Syph., January, February, March, 1900.

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⁹Brit. Jour. of Der., September, 1901.

¹⁰Monat. f. Der., Bd. xxxii, No. 4, August, 1901.

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Concerning Antipyresis in Children.

By E. W. SAUNDERS, M.D.,

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THE controversy concerning the salutary effect of fevers in the infectious diseases is by no means conclusively ended, but the principle that high temperatures must be regulated and controlled is based on substantial clinical grounds, and must be strictly observed in actual practice.

I need scarcely remind you of the great susceptibility of childhood to causes which produce febrile movement. Very slight causes will often produce high fever. the changes in the temperature curve are often very abrupt; and again, there is a disposition to continuous fever in diseases which are decidedly remittent or intermittent in the adult. Altogether children bear fever very well, and almost continuous high fever for weeks, without autotoxemia, produces very little change in the organism, outside of the disturbances of nutrition. Children differ greatly in their morbid reaction to high temperatures. Some will be very sick with a temperature of 103° F., while others play about with a temperature of 105° F.

It is, therefore, apparent that the urgency of antipyresis depends on the concomitant symptoms, and not on the height of the mercury alone.

It is very questionable whether even moderate temperatures in comparatively mild diseases should be entirely disregarded, if there is evidence of suffering. The parents demand relief, even if no especial effect is produced on the course of the disease by the use of antipyretics. Hence it is the universal practice to administer an antipyretic in all febrile affections. These may even be denounced as harmful, but their use continues.

Of the various antipyretic measures, hydrotherapy certainly takes the first place; but the physician who uses this means to the exclusion of others will find himself seriously handicapped. The physician who has a variety of means at hand and can use them efficiently, will accomplish the best results. The

tendency of the disease, the condition of the patient, and the effect of the remedial agents, must be considered in prescribing a certain treatment. In many cases it is decidedly advantageous to combine internal and external antipyretics. This is especially true in hyperpyrexia. When the temperature is above 105° F., absorption from the alimentary canal is uncertain, and even when drugs enter the circulation their effect is inhibited. In these cases it is well to precede the exhibition of the drug by hydrotherapeutic measures.

This combined method is not sufficiently employed. Some practitioners rely entirely on the administration of antipyretic drugs, while others rigidly hold to the practice of hydriatics. If the temperature is in the neighborhood of 105° F. the bath should be used until the fever falls several degrees, then an internal antipyretic will exert its physiological effect and maintain the reduction. By using the bath first for some time it is rarely necessary to give heroic doses of the antipyretic drug, moderate doses accomplish our object, and danger of cardiac depression is obviated.

The use of the coal-tar antipyretics is regarded as dangerous, and yet they may be used with safety in many cases, and their analgesic effect gives them an unique position in the treatment of fevers.

In the use of the coal-tar products, it must always be remembered that they depress the activity of those vital processes by which infections are conquered. They should be used very sparingly when their are indications that the patient will need all his vitality to overcome a prolonged bacterial invasion. Their use is also contraindicated in all diseases in which the heart is liable to fail—such as diphtheria and pneumonia.

In the early stages of scarlet fever and the other exanthemata, they are not harmful, and the relief that they afford will generally justify their use. In influenza they are generally indicated for the relief of pain, although some cardiac stimulant should be combined with them. I have found the combination of phenacetin and camphor advantageous. Camphor is a heart stimulant and also nerve sedative; it is also a mild antipyretic, according to Lauder Brunton.

Let me also call attention to the value of pilocarpin as an eliminant and antipyretic in diphtheria and scarlet fever. The salivation produced by this drug is invaluable in preventing

toxic lesions, and allows the organism full power to eradicate the disease. When the fever is very high, hydrotherapeutic measures should precede each dose of the drug. I have, for many years, depended largely on pilocarpin and the bath in the treatment of scarlet fever. In diphtheria, as an adjuvant to antitoxin, pilocarpin is almost indispensable; it removes toxin, while antitoxin neutralizes it.

In pneumonia, *veratrum viride* is the safest antipyretic. It relieves the pain and lowers the temperature, particularly when aided by hydrotherapy, quiets the nervous system and prevents excessive pulmonary engorgement. Its general neglect is undeserved, and authorities who condemn its use are those who have had little or no experience with it. Of course, it should be given under careful supervision, its effect must be closely watched, and when the physiological effect is produced the dose must be reduced or its administration discontinued. *Veratrum* is one of the best remedies for the relief of headache in the first week of typhoid fever.

Another valuable antipyretic is the external application of guaiacol. DaCosta, in 1884, first proposed this remedy for the reduction of temperature in typhoid fever. He recommended that not more than thirty drops be painted on the abdomen. In a very short time the temperature drops, and profuse sweating ensues. By other clinicians its use has been extended to the treatment of other diseases, particularly tuberculosis and pneumonia. In fact, the lamented Moncorvo proved that the external application of guaiacol can be used as a diagnostic aid to differentiate tuberculosis from malaria, since there is prompt reduction of temperature in the former disease, while in the latter the fever is unaffected.

Just how guaiacol acts in reducing fever is still unsettled. Carter declared that it must act reflexly from its peculiar action on the peripheral nerve. He bases his claim on the ground that the effect is too prompt to allow of effect from absorption. In fact, he could not determine its presence in the urine when the drug was not inhaled.

But to the clinician who watches the fall in the fever and sees the effect on the sudoriferous glands this explanation seems almost ridiculous. The drug must be absorbed, and its different action on the skin and gastroenteric route can be explained in the fact that in the former the liver is circumvented. When given by the mouth it is retained or neutralized in the

liver, while it passes directly into the circulation when applied to the skin, and can thus act on the central nervous system.

I have found this method exceedingly valuable as an antipyretic in infants and children. When the stomach is very irritable, and hydrotherapy inapplicable for any reason, the external application of this drug acts well. In pneumonia, particularly, many infants do not bear cold baths well, and here this method is indicated. In typhoid fever, and especially in tuberculosis, there should be no hesitation in applying guaiacol, if the temperature and other symptoms demand its use. With care there is little danger of depression. The susceptibility of infants to this remedy varies greatly; in some, one drop, applied externally, will produce the desired result, in others several drops must be used.

Hydrotherapy is now general employed, but its practical application demands a knowledge of its principles and also a correct appreciation of a varied technique. The water must be applied differently in different cases. Some children can take the full bath very nicely, others become very chilly and do not react promptly. For general use the wet pack is the most likely to agree.

The Etiology of the Summer Diarrhea of Infants.

By JOHN ZAHORSKY, M.D.,

ST. LOUIS, MO.

WHEN we recall the enormous expenditure of time and labor that has been used in investigating the etiology of the diarrheal diseases of infancy, we are forcibly struck with the hopelessness of attempting to solve the problem by the usual means of bacteriologic research. The large number of micro-organisms makes the subject so very complex, that the ordinary mind can see no avenue for advance. And yet, if the recent investigations of Duval and Bassett are confirmed, the whole subject becomes one of marvelous simplicity.

A very brief review of the work done in the last fifteen years may be profitable before accepting Shiga's bacillus as the specific micro-organism.

Since the advent of bacteriology clinicians have been inclined to view the gastroenteric diseases of children as having a microbial origin. This impression was based on the phenomena connected with the disease and the general etiologic factors determined. Lesage and Hagens demonstrated that the disease is communicable, and the former isolated a bacillus which he believed to be the cause of the green diarrheas.

With the discovery of toxic ptomaines, an explanation of the general symptoms was offered, and Vaughan and others isolated toxic substances.

Escherich and his pupils discovered that the constant flora of the intestines were the *bacillus lactis aerogenes* and *bacillus coli*.

The extensive labor of Booker revealed the fact that about fifty different varieties of bacteria inhabit the intestines. Jeffries added a large number. The result of these investigations produced the deduction that the disease was not specific, but depended on a great variety of germs.

The first inroads on this chaos was made by Escherich's students, when a streptococcus was found constantly associated with certain forms of diarrhea.

A most important step was made when Pfaundler applied the Gruber-Widal reaction. He demonstrated that the infant's blood gave the specific reaction toward certain colon bacilli. It will be a question to be determined in the future whether he experimented with a true colon bacillus or Shiga's bacillus. For if this germ is really so common it must have been mistaken for the colon bacillus.

Furthermore, Escherich and his pupils established that the *bacillus acidophilus* is a normal germ in the intestine of the breast-fed infant.

Moro found some staphylococci in the dyspepsia of breast-fed infants, and believed that the acute indigestion of breast-fed infants was due to this germ.

This summer Bassett and Duval, working under the direction of Prof. Flexner, found the *bacillus dysenteriae* Shiga constantly in the stools of nearly all cases of gastroenteric infection. Their work was done at the Wilson Sanitarium, Baltimore.

Duval and Bassett established the pathogenicity of their bacillus in the same way that Shiga determined its relation to dysentery; namely, by the application of the Gruber-Widal test. They claim that this reaction was given in almost all cases, and was never given by the blood of normal infants.

As soon as I learned from their preliminary report (*American Medicine*) that the blood of infants who suffered from summer diarrhea agglutinated the bacillus, I asked Dr. Fisch to make the test, to which he kindly consented.

Blood was taken from infants suffering from ileocolitis, gastroenteritis, and dysentery. Most of the cases examined gave the specific reaction. Blood taken from healthy infants did not give the agglutination.

It is difficult to appreciate the discovery that Shiga's bacillus is the cause of acute diarrheal diseases. If this one micro-organism is the principal offender, certain clinical objections arise which makes us hesitate to accept its etiological relationship. If this is true, then bacillary dysentery and ordinary enteritis should occur about the same time. My own experience this summer confirms this. Among the numerous cases of summer diarrhea seen, a large percentage of them gave the clinical symptoms of an enterocolitis or dysentery. Many cases never showed bloody discharges, but the great quantity of mucus and the accompanying tenesmus demonstrated that the colon was, at least in part, the seat of the disease.

Altogether, with very few exceptions, the type of the disease in all cases was that of an enterocolitis. No typical case of cholera infantum was observed. In several cases of dysentery I examined the stools for the ameba coli, but was unable to find them.

During the season many cases of dysentery also occurred in adults, consequently the cases seen by me do not militate against the view that Shiga's bacillus is the cause of all diarrheas prevalent this past summer.

But other objections may be given. Why does dysentery assume its peculiar type when prevailing in a family. We should expect to find one child suffering from a dysentery, another from gastroenteritis, a third from simple diarrhea; but, on the contrary, we find the types of the disease maintained in most cases.

It is known that in the ordinary dysentery, particularly

in infants, the small intestine, and even the stomach is usually affected, consequently the different clinical pictures may be viewed as an accidental invasion of different parts of the intestinal tract.

That the disease depending on the same cause may produce varying clinical pictures was well demonstrated at the Bethesda Foundling Home. During the last week in August, 1902, twenty cases of gastroenteric infection appeared among the infants on the first floor; this disturbance was not present on the second floor. The former infants were fed on 4 per cent cows' milk, while the latter received 8 per cent milk diluted. The infection was, consequently, believed to have its origin in the 4 per cent milk. Of these twenty-five cases the vast majority presented mild symptoms—vomiting and diarrhea, which subsided in a few days. Only one of all showed blood in the stool; three had fever, in one case the temperature rose to 103° F. The stools of a few contained mucus. The common stool was a thin, watery passage, containing green and undigested particles. The diarrhea persisted for several weeks in about half-dozen cases. One baby, Andrew, of whom a more extended report follows below, became dangerously ill, and after four weeks of illness is very emaciated. The blood of the three worst cases was tested, and the characteristic agglutination of Shiga's bacillus was present. The blood from other babies from the Foundling Home did not give the reaction. From the stools of Andrew, Dr. Fisch isolated the bacillus dysenteriae Shiga. There can be little doubt, then, that this epidemic depended on this bacillus.

The other patients of whom the blood was tested presented various gastroenteric symptoms. Two were patients at the St. John's Dispensary. One gave a history of subacute gastroenteric disease, the other was one of four days' standing, yet both gave the reaction. Three other infants from private practice complete the list. One was a typical case of dysentery, and the blood promptly agglutinated the bacilli. One other was taken from a severe case of summer diarrhea. The reaction was negative on the fifth day of the disease. A third also did not react.

Altogether these examinations confirm the discovery of Duval and Bassett, that the summer diarrhea depends on the bacillus dysenteriae. Of course, this does not exclude other micro-organisms from the disease, neither does it mean that

dyspepsia can not be produce by the common germ, but it must be considered the principal etiological micro-organism.

REPORT OF CASE.

Andrew, aged 27 months; an inmate of the Bethesda Foundling's Home, was taken suddenly sick on August 28, 1902, at the same time that about twenty-two other infants became sick. The symptoms were profuse diarrhea and vomiting. At no time was blood found in the stool. The passages were greenish in color and often very slimy. His temperature never rose above 99.6° F. He was given a dose of oil followed by bismuth. He was also taken from the milk and placed on gruels. But he continued to waste; convalescence was very slow and after three weeks he still was very sick.

His blood gave the agglutinating reaction, and the bacillus dysenteriae were isolated from the stools.

In the fourth week he gradually commenced to mend. Some edema was noticed in the lower extremity; the appetite grew better. Small doses of wine and cod-liver oil were given. The milk diet was gradually restored.

The especial interest attached to this case is that he was so very sick and convalescence so very much protracted, when others in the same room apparently infected with the same bacillus were sick only a few days. I do not want to be understood that all were sick only a few days. Many of these infants had diarrhea, more or less severe, for several weeks, but none emaciated so much or seemed in danger at any time.

Even from this limited study, no symptoms were present which might be utilized clinically for suspecting or determining the bacillary diarrhea. The diagnosis must depend on the reaction of the blood and demonstrating the bacilli in the stools.

As we already know that the typhoid bacillus can produce symptoms which resemble the summer diarrhea, to this is added infection by Shiga's bacillus. Other germs will, no doubt, be demonstrated in the future. Hence the subject will probably lose the simplicity which now appears to us.

Bacillus Dysenteriæ.

By CARL FISCH, M.D.,

ST. LOUIS, MO.

THE apparent importance of the announcement of Duval and Bassett of the etiologic rôle that the *B. dysenteriæ* plays in summer diarrhea of infants may justify a few remarks about this bacillus and its history. The discovery dates back a few years ago, when Shiga, in Japan, found it in a great number of cases of dysentery, and only in these. He was the first to show the existence of at least two forms of this disease, that formerly, as a rule, were thrown together. On the one side the amebic form, in which the bacilli could not be found, and on the other the bacillary dysentery, where they were always present and where their etiologic quality could be demonstrated by the agglutinative reaction of patients suffering from the disease. It is very likely that the same bacillus has been discovered before Shiga by others, but its pathogenic and specific qualities were first recognized by him, and it is a futile attempt to rob him of his priority, as some French investigators try to do at the present. Since Shiga, we knew that there existed a dysentery in the Orient, that was caused by a specific bacillus.

Soon after his reports appeared, there was published (1900) in Germany a brilliant investigation by the since deceased Kruse, in which in a conclusive way was shown that the cases of dysentery appearing epidemically in certain parts of Germany were always accompanied by the presence of a peculiar bacillus, and Kruse, too, established the fact that these dysentery patients gave a characteristic agglutination with this bacillus, while normal blood never gave it. Kruse, too, did not hesitate to ascribe to this bacillus the causative function in a certain group of dysentery cases, and supported in a later paper his thesis by a great number of further observations. Meanwhile Flexner had followed the work of Shiga in the Philippine Islands and fully corroborated the results of the latter. The bacillus, he found, agreed fully with the description of Shiga, although some unimportant differences of the cultural behavior of the germ were thought existed.

To Flexner and his school is due the merit to have finally established the truth, that the bacilli found in the different parts of the world by different investigators were of the same kind, and that, therefore, bacillary dysentery all over the world is caused by one and the same bacterium and is the same disease. For our country, under Flexner's guidance, this proof has been brought by his pupils, Duval and Vedder, and after them confirming findings have been reported from various parts; in two cases, so far, I have been able to isolate the bacillus here in St. Louis.

If we ask what allows of assuming that the B. of Shiga is the cause of dysentery, we must first point to its never-failing presence in patients suffering from the disease. In early and acute cases they form the majority of the fecal bacteria; they are found in the intestinal lesions and other organs. Above all, they are agglutinated by the blood serum of the patients at very high dilutions, while normal persons never give this reaction. The bacillus has toxic properties for lower animals, but so far all attempts have failed to produce a symptom complex in animals resembling that appearing in man. The blood of animals treated by injecting them with the bacilli acquires the same high agglutinative quality as that of man.

The bacillus does, morphologically, not offer any distinctive features; it belongs to the group of forms which partake of the characters of the typhoid bacillus and the bacillus coli communis, although by certain peculiarities in their biologic properties they can be readily distinguished from each other and from other nearly-related forms. It grows readily on our common media, is not motile, although Shiga at first described his organism as motile; bouillon is diffusely clouded, it does not ferment sugar, is not a distinct acid-producer and has no peptonizing power. Duval asserts that he has been able to stain flagella.

Its resistance toward changes of the surrounding conditions is rather high, especially does low temperature not affect it and in infected material it may survive even the hardest winter. Spores are not formed. In shape it is a little plumper than a typhoid bacillus; it stains well with all coloring media, not after the Gram method.

Little is as yet known as to its pathologic effect, when it invades the tissues. Of course, the pathologic lesions of dysentery are well known, but dysentery has so far been a name,

under which certainly the pathologist has described a number of conditions that have no etiologic relations to each other. A wide field for special research has been opened by the discovery of the specific bacillus.

So far it has been impossible to devise a way for the production of bactericidal substances, especially for the lack of animals, which in an acute form might react against the injection of the bacillus. As already said, the injections made subcutaneously or intraperitoneally produce only a slow intoxication with subsequent marasmus and death. Increase of virulence has not been obtained or attempted by repeated passages. All observers agree that bactericidal substances can not be demonstrated and that particularly Pfeiffer's phenomenon never appears. The serum of animals having received repeated injections does not influence in any way the susceptibility of fresh animals. On the other side, agglutinating substances are more easily demonstrated, and sera of a high agglutinating power can be prepared. The results which Shiga therapeutically has obtained with such sera have not been encouraging. Here, also, further study has to reap a harvest.

As to the communication of Duval and Bassett it is too early to form any conclusions. Seemingly there is a relation of the bacillus to a great number of intestinal infections of infants; the bacilli have been found in a number of cases and the agglutination reaction is typical in many of them.

Dr. Zahorsky and I have commenced to make investigations in this line, as you have heard. The results, so far, have been puzzling in the number of positive reactions; in one case the bacilli could be easily isolated from the stools. Blood from healthy infants in a few tests was always negative as to agglutination.

Certainly, under the head of summer complaint, a number of etiologically different conditions are gathered. It would be injudicious, with the small material on hand, to make general conclusions. It seems, however, that after the endless endeavors of many investigators, at least these two have succeeded in clearing up a part of the so far inapproachable intestinal disturbances of infants.

NOTE.—A paper published by Shiga after the reading of this note contains very important contributions to our knowledge of the biologic relations between the bacillus and the infected organism.

The Cecum: In Relation to the Psoas Muscle in 310 Adult Male and 125 Adult Female Autopsies.

Trauma of the Psoas Produces (Peritonitis) Pericecal
Peritoneal Adhesions.

By BYRON ROBINSON, B.S., M.D.,

CHICAGO, ILL.

(Concluded from page 368 November Number).

CONCLUSIONS

*In Regard to the Cecum from the Records of 435 Personal
Autopsic Abdominal Inspections of the Adult.*

1. Trauma of the psoas muscle produces pericecal peritonitis and pericecal peritoneal exudates when the cecum lies within the range of psoas action.
2. Peritonitis or peritoneal exudates, adhesions, may occur adjacent to the cecum, appendix or distal ileum, or to any bowel segment which lies within traumatic range of action of the psoas.
3. The pericecal peritonitis or pericecal peritoneal exudates are due to microbes or their products passing through the cecal mucosa muscularis and the pericecal peritoneum. *The inciting cause is muscular (psoas) trauma when the bowel segment contains virulent germs.*
4. The pericecal peritonitis or pericecal exudates may exist with apparently healthy cecal mucosa and cecal muscularis, that is, macroscopical and microscopical examinations of endocecum and myocecum show no pathologic process.
5. Hence pericecal peritoneal exudates, or pericecal peritonitis, are not always endocecitis nor myocecitis, but pericecal peritonitis and pericecal peritoneal exudates.
6. The same principal applies to periappendicular peritonitis and periappendicular peritoneal exudates. Periappendicular peritonitis or periappendicular peritoneal exudates do not by any means always indicate endoappendicitis or myoappendicitis, but is an inflammatory process in the periappendicular peritoneum. Therefore, a discrimination should be made be-

tween operations for endoappendicitis with myoappendicitis and periappendicular peritoneal exudates (in short, peritonitis with peritoneal adhesions).

7. Every abdominal viscus must possess a mesentery—a neuro-vascular visceral pedicle.

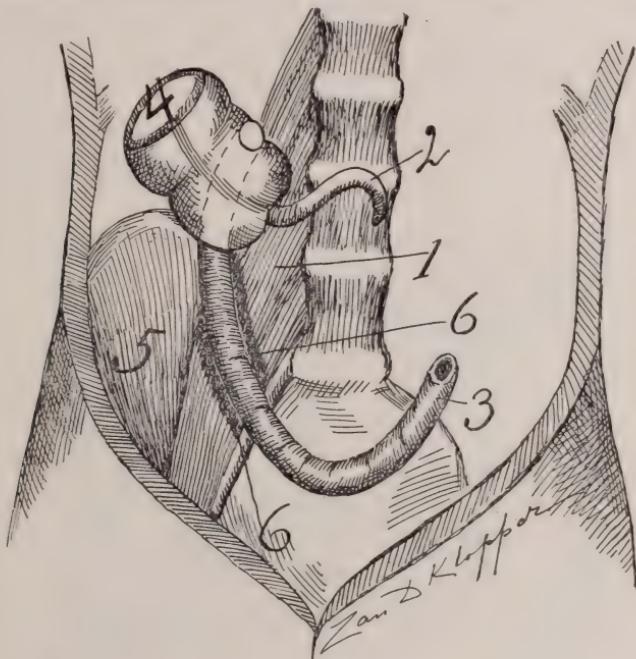


FIG. 17.—Author.—Represents a case of non-descended cecum, and appendix. Some three inches of the distal ileum are required to extend from the psoas to the non-descended cecum. 1, psoas; 2, appendix; 3, ileum; 4, right colon; 5, iliac muscle, and 6, peritoneal adhesions.

7a. The appendix is atrophic. A segment of the cecum arises from constriction of the blood vessels during its descent through the subserosum; that is, the axial rotation of the tractus intestinalis of man is more excessive than any other mammal, except the highest apes; that the appendicular blood vessels are vastly constricted by the time the proximal end of the colon reaches its destination—practically the iliac fossa.

8. The mesocecum is the mesenterico-colicum and the mesoappendix, for through these structures pass the vascular and nerve supply. The mesenterico-colicum is the pedicle which nourishes chiefly the distal (caudalward) cecum, while the mesoappendix nourishes mainly the proximal (cranialward)

cecum, that is the appendix and base of the cecum. The mesoappendix is a substituted mesentery due to the projection of peritoneal folds by the posterior branch of the ileocolic artery. I found these two folds distinct in the opossum (a marsupial).

9. The cecum is maintained in position by three peritoneal folds, viz: *a*, the ligamentum phrenico-colicum dextrum, a fold derived from the ligamentum hepatocavo duodenale and ligamentum hepatorenale. This peritoneal fold has a wide influence in preventing the cecum from passing into the pelvis and also preventing the cecum from assuming the potential position, that is, wandering into the dangerous peritonitic region of the

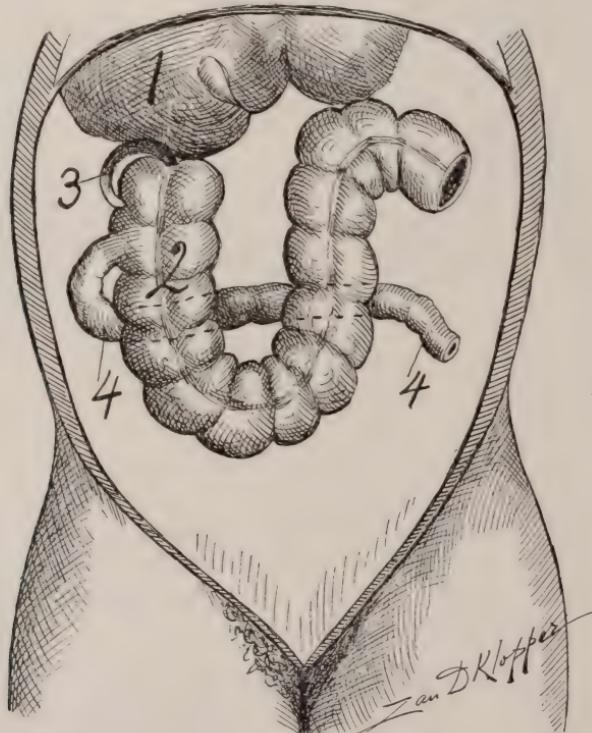


FIG. 18.—Author.—Illustrates the non-descended of the cecum, and appendix, with partial volvulus of the ileocolic apparatus about the right colon as an axis. It appears that an intrauterine peritonitis arrested the cecum about the gall-bladder, but the growing colon moved onward in a loop in the direction of the least resistance toward the iliac fossa. 1, liver; 2, right colon; 3, appendix; 4, ileum entering the colon from the right side and passing posterior to it. Not infrequently such non-descended cecum and appendix are potential in position, that is, an elongated mesocolico mesenteron will enable them to float about in the abdominal cavity.

enteronic loops. In adult man the ligament appears to arise from the distal pole of the right kidney. *b*, Ligamentum intestini ceci externum, a fold of peritoneum derived from the ligamentum cavo-duodenale, this fold fixes the cecum laterally in the iliac fossa. *c*, Ligamentum intestini ceci internum, a fold of peritoneum derived from the ligamentum cavo duodenale. This fold fixes the cecum laterally in the region of the inferior vena cava. The two last folds, *b* and *c*, are variable and inconstant; *d*, the mesocolon dextrum; *e*, occasionally by the retrocecal and the retrocolonic connective tissue of the blood vessels and nerves.

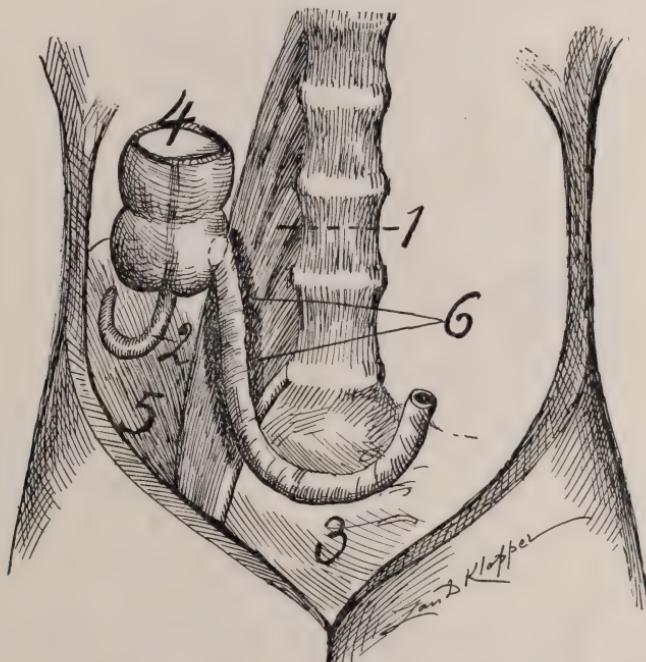


FIG. 19.—Author.—Represents a frequent form of non-descended cecum, and appendix. 1, psoas; 2, appendix; 3, ileum; 4, right colon; 5, iliac muscle, and 6, peri-ileac peritoneal adhesions where the ileum crosses the psoas.

10. I have classified the cecum in relation to the psoas into four positions.

11. The positions of the cecum are: *a*, *The pelvic position*, which occurred in males 10 per cent, with 40 per cent adhesions; in females 20 per cent, with 34 per cent adhesions. *b*, *On the Psoas*, which occurred in males 65 per cent, with 66

per cent adhesions; in females 50 per cent, with 64 per cent adhesions. *c*, *To the Right of Psoas*, which occurred in males 37 per cent, with 57 per cent adhesions; in females 29 per cent, with 33 per cent adhesions. *d*, *The Potential Position*, which occurs in males 32 per cent, with 37 per cent adhesions; in females 31 per cent, with 25 per cent adhesions.

12. Unusual ceca are: *a*, excessively large; *b*, excessively small, and *c*, excessively mobile. Excessively mobile ceca, due to an elongated fixation apparatus, are the dangerous ceca, as they belong to the potential position, which may wander in the dangerous grounds of peritonitis, among the enteronic loops or near the diaphragm.



FIG. 20.—Author.—The arterial circulation in the dorsal, posterior, surface of the cecum and appendix. A, ileocolic artery; B and F, posterior cecal artery; C, appendicular artery; E, appendicular for free end; H, artery of basal end of the appendix. Note the fine arterial supply of the appendix which has a rich anastomosis. The posterior branch of the ileocolic (C, E, H) practically supplies the appendix. Observe the fine anastomosis between the appendicular and posterior branch of the ileocolic artery. 1, right colon; 2, external sacculus of the cecum; 3, appendix; 6, ileum; D, arteries on the dorsal surface of the ileum. The blood supply of the appendix shows how easily it is gangrened.

13. There are four types of ceca, viz: *a*, *The fetal type*, male 34 per cent, females 37 per cent; *b*, *The symmetrical type*, males 38 per cent, females 30 per cent; *c*, *The non-symmetrical type*, males 22 per cent, females 24 per cent; *d*, *The atrophic type*, males 5 per cent, females 8 per cent.

14. The causes of cecal types are variations of blood supply during cecal descent.

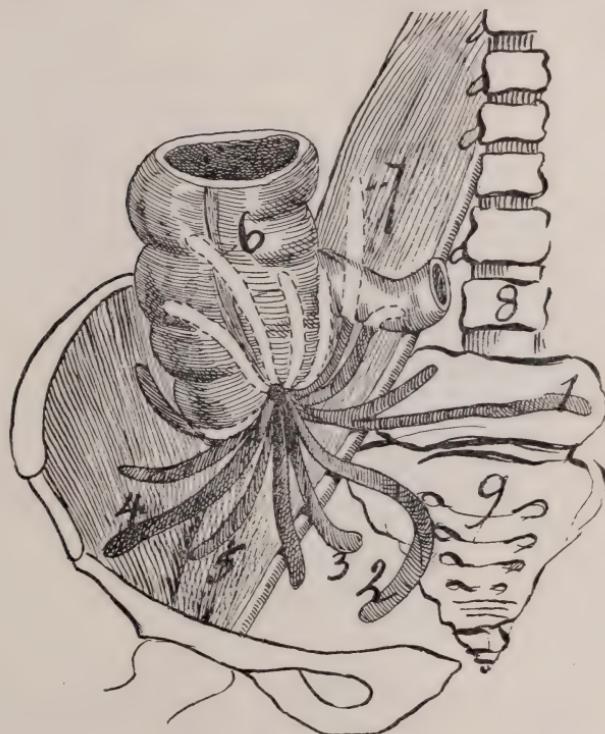


FIG. 21.—Author.—Illustrates the numerous positions of the cecum and the appendix relative to the psoas iliac muscle. 1, appendix parallel to the distal ileum; 2 and 3, appendix in the pelvic position; 4, appendix resting on the iliacus; 5, appendix resting on the psoas; 6 and 7, represents six retrocecal positions of the appendix. The appendix radiated like the spokes of a wheel from the ceco colon as an axis.

14a. A factor of considerable importance in regard to unusually large or highly-developed ceca, or to ceca with an elongated cecal fixation apparatus is splanchnoptosis. Splanchnoptosis is due chiefly to three palpable factors, viz: *a*, separation and elongation of the fascia in the abdominal

wall, particularly at the linea alba and at the linea semilunaris; *b*, separation and elongation of the muscular fibers of the abdominal wall, particularly the diastasis of the musculi recti abdominales, since the mesenteries are not intended for mechanical support they elongate and their viscera follow the yielding abdominal wall and splanchnoptosis results; *c*, gastroduodenal dilatation from pressure of the transverse duodenum by the superior mesenteric artery vein and nerve. Now

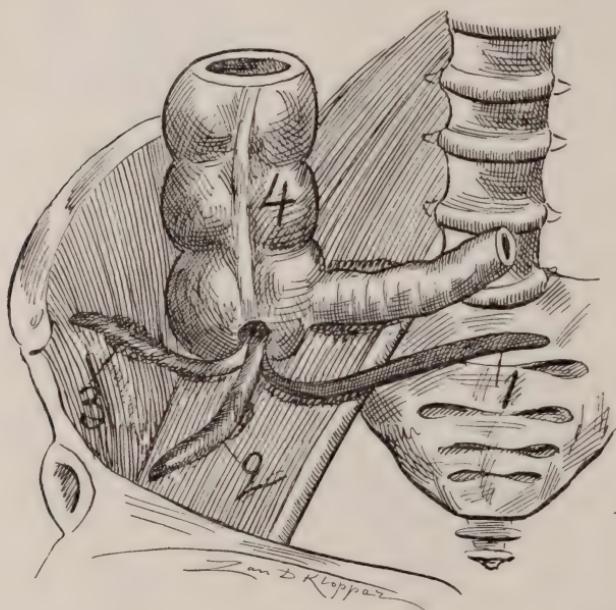


FIG. 22.—Author.—Illustrates a very common position of the appendix, cecum and ileum relative to the psoas. 1, the appendix lying parallel to the distal ileum; 2, appendix lying parallel to the psoas, pointing to Poupart's ligament; 3, appendix lying horizontal to the iliopsoas and pointing to the right iliac fossa. Ileum within range of traumatic muscular and arterial action surrounded by adhesions. No pericecal peritoneal adhesions are drawn.

the excessively mobile ceca—the potential ceca, with elongated fixation apparatus belongs to this condition. The splanchnoptosis of the cecum, and consequently, the appendix compromise the circulation, blood and lymph, traumatizes the nerve periphery (pain), deranges peristalsis and secretion, jeopardizing the structure and function of the cecum and appendix. For six years I have bettered gastro-duodenal dilatation by gastro-enterostomy, and six years ago Dr. O. W. Mac-

Kellar and I performed our first splanchnoptosis by uniting the two musculi recti abdominales into a single sheath. Both operations have proved successful for six years, ample time for test.

15. The average dimensions of the cecum are, in length, males $1\frac{1}{2}$ inches, females $1\frac{1}{4}$ inches; in width, males $2\frac{1}{2}$ inches, females $2\frac{1}{2}$ inches.

16. Nondescent of the cecum occurs in males 10 per cent, females 4 per cent.

17. The cecum is subject to about 30 per cent of volvulus of the tractus intestinalis.

18. Practically 310 males presented 60 per cent pericecal peritoneal adhesions.

19. Practically 125 females presented 48 per cent peritoneal adhesions.

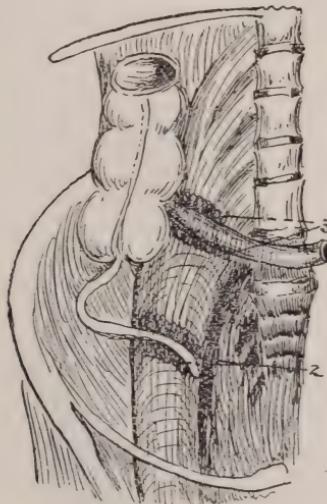


FIG. 23.—Author. — Illustrates a cecum not fully descended; the long appendix is practically descended. The ileum, 3 and the appendix, 2 come within range of traumatic adhesion of the psoas, inducing peri ileac and periappendicular peritoneal adhesions. When the full story of appendicitis is told it will be revealed that the peritoneum has much to do with inducing appendicitis from periappendicular peritoneal adhesions, compromising blood and lymph circulation, as well as appendicular peristalsis, secretion and absorption, traumatizing nerve periphery, besides the distortion of the appendix by the adhesions obstructing drainage—the most essential. The cecum, lying to the right of the psoas, is free from pericecal peritoneal adhesions because the traumatic range of action of the iliac is quite limited.

20. The greater number of pericecal peritoneal adhesions in males is due to the more frequent trauma of the cecum by the psoas.

21. Pericecal peritoneal adhesions are of importance, as they compromise : *a*, the lymph and blood circulation of the cecum; *b*, adhesions compromise cecal peristalsis and hence, the fecal current is hindered; *c*, adhesions traumatize nerve periphery, inducing pain and devitalizes; *d*, they compromise the mobility of the cecum; *e*, adhesions which compromise the cecum, generally compromise the appendix; *f*, adhesions which fix the cecum, compromise it, first, by fixing it within range of muscular and other trauma; second, they render its mucosa a prey to ulceration; third, its myocecum to perforation; fourth, its pericecum to repeated invasions of peritonitis, and fifth, the pericecal adhesions of man are due to the erect attitude and are the consequence of muscular trauma (ileo-psoas), chiefly.

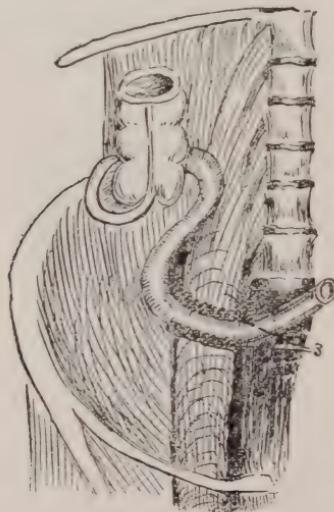


FIG. 24.—Author.—Non-descended cecum, and appendix, requiring five inches of ileum to reach from psoas to the cecum, illustrates well that any bowel structure which crosses the middle of the psoas is liable to have an exudate around it. Here the cecum and appendix are non descended and entirely out of range of the psoas muscle; but the ileum, 3, where it crosses the psoas, had adhesions on both sides of it.

22. Pericecal or periappendicular peritoneal adhesions are dangerous, as they may tend to disasters.

23. In operations in the right iliac fossa, pericecal or, per-

haps, periappendicular peritoneal, adhesions must be studied.

24. Post-mortem and clinical evidence proves beyond reasonable doubt that the most treacherous and profound abdominal diseases are usually found in the distal right peritoneal quadrant and is not cecitis but appendicitis.

25. However, psoas trauma produces pericecal peritoneal exudates, adhesions compromising cecal structure and function, devitalizing it for the battle of life's existence, and whatever unfits the cecum for vital resistance compromises the appendix in structure and function.

26. If the cecum is fixed in peritoneal adhesions, peristalsis defectively forces the fecal current distalward, hence the cecum becomes a culture retort for virulent germs, which may cause endo-cecitis and eventually invade and infect the appendix, and frequently peritonitis exists, but neither endo- or myo-cecitis or endo-appendicitis exist.

27. Many operations are now being performed for supposed appendicitis where there exists only pericecitis and periappendicitis, which is manifest by pericecal peritoneal adhesions or periappendicular peritoneal adhesions. It is a prophylaxis against the profound and treacherous perforative appendicitis. However, the season is at hand to compel surgeons to announce for what they operate in the right iliac fossa, viz, is it endo- or myocecitis or pericecal exudates? Is it endo- or myoappendicitis or periappendicular peritoneal exudates?

The investigations of this paper, extending over twelve years, clearly prove that in 600 personal autopsic abdominal inspections of subjects (adults and children), who died of other diseases than those of the right iliac cossa, two frequent conditions existed, viz: First—*a*, periappendicular peritoneal exudates; *b*, endoappendicitis, and *c*, myoappendicitis, in the order named. Second—*a*, pericecal exudates; *b*, endoceritis, and *c*, myocecitis, in the order named.

Since 70 per cent of peritoneal exudates exist in the adult right iliac fossa (as related to the appendix, cecum or distal end of the ileum with the psoas), it is evident that many operations are now performed simply for peritoneal exudates (adhesions), with a supposed endoappendicitis plus an endoceritis or, very rarely, a myoappendicitis plus a myocecitis.

In other words, as I announced in 1894, peritoneal adhesions produce pain, especially when the adhesions (exudates) surround and fix any segment of the tractus intestinalis, placing a check on motion (peristalsis), deranging secretion (excessive, deficient and disproportionate) and disturbing sensation.

LEADING ARTICLES.

EPISTAXIS FOLLOWING NASAL DIPHTHERIA.

By E. W. SAUNDERS, M.D., St. Louis, Mo.

It does not seem to be generally understood that the danger of very severe—even fatal hemorrhage, following exfoliation of the diphtheritic pseudomembrane in the nose is in no way lessened since the use of antitoxin; in fact, this danger is really more liable to occur, since the separation of the pseudomembrane is more prompt than ever occurred before the use of antitoxin.

In 127 cases, Councilman, Mallory, and Pierce found the nasal mucous membrane involved in 43 cases. Most commonly it is an extension from the pharyngeal inflammation, but it may occur primarily in the nose when it is prone to assume a very slow process, which is accompanied by few general symptoms. But whether primary or secondary the pseudomembrane is prone to separate *en masse* and expose a raw surface on the turbinated bodies and septum, which bleeds freely. Many cases of death from hemorrhage of the nose following nasal diphtheria have occurred.

The reason for this uncontrollable hemorrhage is found in the nature of the nasal structures, in the lessened coagulability of the blood, and the destruction of the vasomotor nerves around the lesion by the diphtheria toxin.

Blood vessels in cartilage and bone can not contract and retract as in the soft tissues, and they are poorly supplied with vasomotor nerves.

The physician must be constantly on the alert in cases of nasal diphtheria. When the pseudomembrane begins to separate, he should have on hand a weak solution of Monsell's solution, and the nurse must be taught how to use it when epistaxis begins.

The solution is best applied with a feather or cotton applicator. If the hemorrhage still persists the nose must be plugged with cotton dipped in the iron solution.

I wish to call attention to the fact that remedies to stimulate the contraction of the blood vessels are useless in these cases. The application of adrenalin is useless, since the vasoconstrictor apparatus has been destroyed. This is one instance in which this powerful vasoconstrictor is ineffectual. We must stop the bleeding by pressure and by favoring the coagulation of the blood.

THE TREATMENT OF DIABETES MELLITUS.

By W. L. JOHNSON, M.D., St. Louis, Mo.

The pathogenesis of this disease is still obscure. There are cases still living that were years ago diagnosed diabetes mellitus. Brunton calls these cases gouty glycosuria and mentions a patient of his who suffered with gouty glycosuria for thirty years, dying at the ripe old age of 88 years. Genuine diabetes is a rapidly fatal disease, lasting rarely more than six years.

The liver unquestionably has a part in many, if not all, cases of diabetes. One of its functions is to store glycogen for use during the fasting periods. Sugar is transformed into glycogen and fat. The sugar is oxidized normally, supposed by a ferment, excreted abnormally.

Glycogen is, as is well known, formed from albuminous foods and not exclusively from carbohydrates, so that we may exclude the latter and still have glycosuria.

As Brunton points out, if the glycogenetic function of the liver be imperfectly performed, too much sugar will pass into the circulation and be excreted by the kidneys. Hence we must not overcharge the liver either with starches, sugars or proteids.

The muscles may play a part, and from the value of massage and exercise it would seem that the sugar derived from glycogen is better oxidized and not excreted as freely as when little or no exercise is taken. We have, therefore, massage and moderate muscular exercise in the treatment of diabetes.

Brunton says diabetes may arise from increased formation of sugar due to—1, excessively rapid digestion of starch or sugar; 2, to failure or imperfection in the glycogenetic function of the liver and, possibly to some extent, also in the muscles; 3, to increased transformation of glycogen into sugar, due to accelerated circulation through the liver, or

a larger proportion of ferment in the organ or the blood. The accelerated circulation may be from a new lesion.

The pancreas is a factor also; for its extirpation is followed by symptoms of diabetes. If the duct, however, is ligated, diabetes does not follow. If pancreatic tissue is transplanted to the animal from which the pancreas has been extirpated, or it is fed on fresh raw pancreas, the diabetic condition does not supervene.

It remains, therefore, to determine where the fault lies, whether in the liver, the muscles, the nervous system or the pancreas. This, at present, in the vast majority of cases, is not possible. We must, then, experiment, and the day may soon come when the pancreatic extract, hepatic extract, or certain ferments may be successfully used. Experiments have already been made along this line, but as yet the results are not accurately known. Until we have more light we must continue to reduce the ingestion of carbohydrates, prescribe massage and reasonable muscular exercise, and resort to opiates in appropriate cases. Probably the best tonic drug in these cases is arsenic, acting as it does upon the nervous, hepatic and muscular system.

STOKES-ADAMS DISEASE.

By A. S. BLEYER, M.D., St. Louis.

Pulsating abdominal aorta is regarded, at least in this country, as some anomalous derivative of a somatic neurosis, usually but indefinitely, associated with some gastroenteric derangement.

As far back as 1829, Dr. Adams described a triad of symptoms that to him characterized the affection. His views were supported by Stokes, a few years later. And, although, more recent observations have shown the syndrome of symptoms pointed out by these men to be frequently inconstant, abdominal aortic pulsation is decidedly of greater diagnostic value than is generally recognized.

Huchard prefers the above name for the disease, and gives its salient features:

Neurotics; usually women; very slow pulse; tendency to syncopal attacks and to apoplectiform and epileptiform seizures.

The apoplectiform seizures are never followed by paralysis, and are preceded and attended by extreme bradycardia, the pulse-rate falling sometimes to 20, 10 or even 5, to the minute. As a rule, however,

the pulsations run between 20 to 40. Between such attacks, which may be very infrequent, the pulse remains very slow, and is influenced in a remarkably slight manner by intercurrent influences that are usually attended by a high pulse-rate.

For example, a woman presenting a pulsating abdominal aorta, whose pulse was 36 per minute, contracted pneumonia, the temperature rising to 104° F., the pulse only increased to 44. In another case, one of intestinal infection with temperature of 104.8° F. the pulse changed from 26 beats to 29 beats per minute. It is to be mentioned, however, that these pulsations are radial and that they do not by any means represent the actual heart action; sphygmographic tracings reveal a systolic contraction between almost every two radial impulses. It is in such cases that digitalis appears to quicken the heart's action, since it serves to amplify the blood waves which otherwise would not have been perceptible at the wrist.

Huchard distinguishes a pulsating abdominal aorta from aneurism by the fact that the pulsation is not lateral, nor expansile, but frankly forward. And further, that the pulsations frequently disappear entirely, to reappear again perhaps, after a period of several days, or again not for a number of years.

The bruit, the tension and slight tenderness in both diseases, together with the syncopal attacks might easily cause the greatest confusion of ideas in diagnosis.

The sudden cessation of the pulsations would of course, clear up every possible doubt as to the condition present.

Since a pulsating aorta can not be looked upon as a stigma of hysteria, and since its pathologic significance is not at all understood, we should not wait to classify the symptom where it belongs. The priority of the conception of this group of morbid phenomena rests with Dr. Adams, and though his description of the disease is lacking in accuracy—its conception alone should warrant the use of his name to designate it.

FOOD AND ANTIBODIES.

The theories of immunity have been sufficiently elaborated to merit an entrance into the practical domain of prognosis and therapeutics. It is certain that any intoxication or infection is overcome by the

formation of distinctive antibodies. The production of these antibodies is a function of living cells, and necessarily demands a greater nutritive or metabolic activity of the cells implicated. Whether it be the excessive production and liberation of receptors to neutralize a toxin, or the manufacture of immune bodies and complements for the solution of bacteria, it must be assumed that cell activity in certain organs is above normal and requires an excess of certain nutrient constituents.

The rationale of feeding in fevers may find, in part, an explanation in this excessive activity, and as we are ignorant of the actual chemical constituents required to furnish the needed cell food a liberal supply of all kinds is necessary. The gratifying results in administering milk in infectious diseases may be due to the fact that in itself it contains all the constituents necessary for all cellular metabolism.

Clinically, we can point out certain conditions which are inimical to the welfare of individuals subjected to an infectious process; several disorders of metabolism favor the development of severe general disease. Of these diabetes occupies the most prominent position. Bright's disease and malignant neoplasms, as is well known, often terminate in some form of septicemia, the so-called terminal infections; chronic alcoholics are known to resist the onslaught of infectious diseases with much diminished vigor, and the explanation may also be sought in the slow response in the formation of antibodies.

The general practitioner will be especially interested in the morbidity and mortality of infants fed on a variety of foods. There can be little doubt that the death rate depends, in a great measure, on the promptness in the response which is exhibited by cells in the formation of antibodies. This response is most rapid in the breast fed infant, while in those infants who are deprived of this food the formation of antibodies is too slow. An inquiry into the power of infants to form antibodies in general, and who are fed on a variety of foods, would be very fruitful.

Probably our dietary directions will be very much modified when these principles are elaborated. To feed a patient, who is suffering from a severe infectious disease, entirely on cereal decoctions, canned foods, dried albuminous preparations, or sugar water is the practice of irrational dietetics.

What little we know in this direction points to the necessity of

administering fresh foods, raw milk, and foods rich in lecithins to patients suffering from a severe infectious processes.

EDITORIAL COMMENT.

The St. Louis Water Supply.

It seems rather odd that the question of using alum as a coagulant to clarify water should be considered for a moment in Missouri, where alum is not allowed to be used in baking powders. Yet such is the case, and quite a controversy has been going on for many months as to the feasibility of using alum. We are glad to see that the Commissioner has abandoned the project, and the question of natural and artificial filtration is now being considered.

While the harmfulness of alum in traces in drinking water is far from being positively demonstrated, yet the average citizen breathes easier since it has been decided not to use it. The purification of the city water offers a stupendous problem for sanitary engineers, but the need of purification is growing more urgent as time advances.

The Physician's Waiting Room.

The busy practitioner is often compelled to arrange his office hours at a time of the day which is really inconvenient for his patients. Thus it happens that his hours are placed near the meal time, especially when his office and residence are in the same building. But this is really unimportant when compared to the tiresome hours that patients must wait.

We feel that patients are, like ourselves, averse to waiting for hours. It is astonishing how very patiently some of them will wait; but the physician has no right to impose upon them in this way. Their time may be valuable, but what is still worse is the nervous state in which they are often wrought by this weary waiting.

The busy physician should in every way try to mitigate this hardship. In the first place the waiting room should be large, well ventilated and lighted. No dingy, dark, crowded hall will answer. Think of having a felon, bad headache, or fever and sitting for an hour or more in a dark, dingy, filthy small room with, perhaps, a dozen or more other anxious persons.

Books and periodicals should be at hand in abundance; not magazines many months or even years old, but recent literature, so that those inclined can spend the hour advantageously in perusing the latest publications. Interesting and beautiful examples of art should adorn the walls; collections of fossils, relics, or bricabac add to the comfort of the weary mind.

In examining patients a system should be adopted, which, in the main gives the way to those who came first, but must always allow the one who is suffering the privilege of speedy attention.

Chronic Diphtheria.

The persistence of the diphtheria bacillus for many weeks in the throat of individuals who have had diphtheria is a well-known clinical fact. These are the cases which are the source of many obscure outbreaks of diphtheria. It has been surmised that many cases of pharyngitis, which developed no pseudomembrane, may depend on the Klebs-Loeffler bacillus, but that chronic diphtheria may actually exist in individuals immune to general infection seems to have been established by Neisser in the case of a nurse-girl who infected two children with an acute form of the disease. This patient suffered from a chronic throat affection for several years following an attack of diphtheria. The diphtheria bacillus was demonstrated in her throat and antitoxin was found in her blood.

The interesting question arises how the bacilli can keep alive in the throat when the blood is charged with antitoxin.

Fresh Antitoxin.

Several pharmaceutical manufacturers in the United States are now preparing a very reliable preparation of diphtheria antitoxin. In its distribution and keeping, however, the system is still very lax. It is well known that antitoxin deteriorates in its potency when kept at the ordinary temperature. Even when kept on ice its antitoxic value becomes weakened.

For this reason certain authorities maintain that antitoxin should not be used when more than two months old; at least, when an older

antitoxin is used it should be considered deficient in strength and the dose increased correspondingly.

We wish especially to object to the practice of putting on the vial or package which contains antitoxin the date on which the antitoxin is not to be used. We notice that this date is usually placed six months to one year after the serum is drawn.

The physician wants to know when the serum is taken from the horse, and he is fully competent to judge of its probable potency when considering the time that has elapsed and the place where it has been kept. We will insist, therefore, that the manufacturer place the date of its bottling on the vial.

It is possible, too, that the manufacturer may become liable in damages by dating the vial at the probable time of expiration of its potency. Several deaths from diphtheria have occurred to our knowledge, the death being the result of using an old preparation of antitoxin which had absolutely no effect. The manufacturer really can take no responsibility as to the length of time their product is valuable; each physician should judge that himself.

The Sugar-Controlling Function of the Suprarenal Glands.

The dependence of activity of one organ on that of another is well illustrated by the experiments of Herter (*Med. News*, October 25, 1902). He found that glycosuria is not produced in dogs on extirpation of the pancreas when the suprarenal glands were rendered inoperative previous to removal of the pancreas. Moreover, he demonstrated that irritation of the suprarenals, by pressure, increases the sugar in the blood and urine. The inference is drawn that the suprarenals have a controlling influence on the metabolism of sugar. Interesting as the experiments are, they throw little light on the subject of diabetes.

Sending Original Articles to Several Journals.

Some writers regard their own articles of such extreme importance that they send it at once to several journals. Each editor supposes that he is the only recipient and promptly publishes the original paper. What is his chagrin, when on the following month in perusing his ex-

changes he finds that this same article appears in half a dozen other journals. This practice of "fooling" the editor is on the increase, and we protest against it. The COURIER will publish no paper as an original contribution which appears elsewhere, unless for some special reason the author is desirous of having the article printed in another journal and his purpose is communicated to us.

It is certainly not quite honest for a writer to send a paper to several journals without mentioning this fact to any one; his whole object being to secure a large circulation of the important (?) article.

MEDICAL RESEARCH.

Review of Progress in Physiology, Physiological Chemistry, and Experimental Medicine.

In Charge of

JOHN ZAHORSKY, M.D., A. S. BLEYER, M.D., and PHILIP NEWCOMB, M.D.

Experimental Gastritis.

Turck (*N. Y. Med. Jour.*, November 17, 1902) points out the disadvantage connected with clinical and pathological observations of gastritis, on account of lack of cases coming to autopsy and because of changes produced in the mucosa by autodigestion and autolysis, either post-mortem or during the agonal period. The writer has used mustard for the purpose of producing acute gastritis in animals, because of the relatively mild and prolonged irritating properties and peculiar toxic effect of this agent. An emulsion of sinapis alba and sinapis nigra was employed, which, in combination, produced the oleum sinapis volatile and sulphocyanate of acetyl by the action of myrosin in the stomach. The specimens were taken at varying intervals from the stomach, duodenum and gall ducts of living dogs under anaesthesia, and placed immediately in fixing fluid before changes could have occurred.

After one hour the mucosa was found covered with a deposit of cylindrical epithelia, leucocytes, lymphocytes and red blood corpuscles. The capillaries in the inter glandular connective tissue beneath the surface epithelium and near the muscularis mucosa were all engorged and leucocytic infiltration found in all coats and in the blood vessels of

the submucosa. After two hours all the above conditions were more positive.

The six hours' specimen showed at the cardiac fundus all the classical changes of inflammation. The surface of the mucosa here and over the body of the stomach showed a deposit of a membrane-like structure more or less fibrillar and at times granular and homogeneous in which were found many polymorpho-nuclear leucocytes, degenerated epithelial cells, red blood corpuscles and fragmented nuclei and having in many respects the general appearance of an exudate. Where the focal necrosis was greatest could be seen extensive hemorrhagic infiltration, which, as it increased, pushed up the surface cells causing an irregular bulging of the lining, at the same time pushing apart the tubules. Considerable leucocytic infiltration was found all through the mucosa in the glands, between the tubules in the connective tissue and between the surface cells. Connective tissue proliferation was to be seen in the cells lining the tubules. The vessels of the submucous and muscular coats were greatly engorged while those of the serous coats and the lymph-vessels were dilated and filled with either blood or serum.

After twenty-four hours there was a slight deposit upon the surface of the mucosa consisting of leucocytes, epithelium, a few red blood corpuscles granular detritus and a few colonies of bacteria. In the glands and especially in the tubules there was seen active proliferation of the cells. In the submucosa, muscular and serous coats leucocyte and round cell infiltration was found, the vessels all engorged and containing many polymorpho-nuclear leucocytes.

In many instances cysts were formed of the glands of the mucosa by closure with degenerated epithelial cells. The thirty-six hour specimen showed more especially the evidence of focal necrosis and increase in the colonies of cocci on the surface of the mucosa. The latter was also true of the last specimen taken forty-eight hours after the mustard injection, but in this instance reparative changes had begun, consisting of round cell proliferation surrounding acres of focal necrosis.

The extension of the inflammation from duodenum to the bile ducts is shown in focal areas with desquamation of all points, injection of vessels and marked leucocytic infiltration. Among other things to be noted in the experiments are :

1. The early appearance of an exudate on the surface of the mucosa, composed of cells, granular debris and fibrillar masses, leucocytes and red cells, within one and two hours after the introduction of the mustard emulsion.
2. Later, the debris of cells become more defined and form a more homogeneous mass.
3. The surface epithelium is not destroyed in proportion to the marked changes occurring deeper in the mucosa.
4. Cyst of the glands after twenty-four with accumulation of leucocytes and degenerated epithelial cells.
5. The early exudate is not a good soil for micro-organisms but as it becomes changed in character bacteria develop in the coating on the surface.

Medicinal Blood Poisons.

According to A. Kirl (*Arch Inter. de Phar. et de Therapie*, Vol. X, 1902) the various drugs which possess a deleterious effect upon the blood may be classed in six divisions. Under the first heading are the agglutinins, which, by changing the physical conditions of the red blood corpuscles, cause them to adhere to each other and thus bring about occlusion of the vessels. Ricin and abrin are well known examples. The second class include the hemolysins, which dissolve out hemoglobin deposited in the kidneys and liver while multiple capillary emboli are formed in the stomata of the cells. As examples of this group may be mentioned arsenetted hydrogen, phallin, helvellic and quillajic acids, senegin, sapotoxin and solanin.

The formation of methemoglobin is brought about by drugs of the third division, among which are potassium chlorate, pyrogallic acid and chrysarobin. Hydrocyanic acid and carbon monoxide are examples of the fourth class which forms special hemoglobin compounds. The fifth group comprises fifteen metals which possess the power of entering into union with hemoglobin, and the sixth is constituted of substances producing a partial necrosis of the erythrocytes such as anilin and phenylhydrazin.

Microscopically the effects of the metals on the blood of all animals shows a marked granular degeneration of the red cells and in those with nuclei the process is seen to be in reality a disintegration of the nucleus either within the cell or after extrusion. In all probability the granules represent metallic hemoglobin compounds,

and apparently the normoblasts have no part in the process in mammals.

Brewers' Yeast as a Therapeutic Agent.

Yeast as a fungus possesses the power of absorbing oxygen and given off carbon dioxide. Hence it converts glucose into alcohol and carbon dioxid.

From the *saccharomyces cerevesiae*, a powerful top yeast, many fermentations have also been isolated, among which are invertin, which changes cane sugar into dextrose and levulose; zymase, a monosaccharid splitting ferment; and audotrypsin, possessing proteolytic powers. Beside, the fermentations, the protoplasm contain a proteid nuclein.

Ullman¹ draws the deduction that the therapeutic value of brewers' yeast depends upon the fact that it is rich in nuclein and nucleinic acid.

The study of immunity has shown that the natural resistance of the body is due to one of several causes:

1. The fixed and movable cells have an inherent property of secreting a substance, proteid in character, which acts protective to the organism.
2. Metchnikoff's phagocytic action of the polymorphous leucocytes, acting by chemotaxis and by secreting a substance germicidal in character.
3. The body is capable of producing the antitoxin under stimulation of certain of proteid enzymes, as is seen in diphtheria and tetanus.
4. When the body has lost its resistance the presence of a secondary agent may retard or inhibit the primary infection, such as Coley's toxin injections in sarcoma.

The second of these propositions, that of the phagocytic action of the leucocytes, is held by Ullman to be true in this instance and that nuclein acts directly upon the white blood cells increasing their number and thus the resistance of the organism to disease.

Vaughan,² of Michigan University, believing in a general way upon Metchnikoff's theory of phagocytic resistance, first followed up the idea that insomuch as the phagocytes are largely composed of nuclein the introduction of nucleinic acid into the blood would build up the multi-nuclear white cells and augment the body resistance. His experiments, dating from six years back, demonstrated conclusively an increase in the number of leucocytes. Hahn of the Hygenic Institute

of the University of Munich, states that by the use of nucleinic acid "it is easy to double the original number of leucocytes in a short time. Von Mayer, of Prague, reports an average increase of leucocytes of over 75 per cent following the administration of nuclein. It has also been proven by McClintock, Novy and Vaughan,³ that the nucleins are powerful germicides and that the germicidal properties of the blood are due to this one cause.

Furthermore it must not be lost sight of that the ferment contained and generated in brewers' yeast render it a powerful acid to digestion as they not only act upon the food within the intestinal tract but in a soluble form may become assimilated and have their share in body metabolism. It is claimed also,⁴ that the central nervous system is increased by the use of brewers' yeast.

The conclusion is therefore to be drawn that the therapeutic value of brewers' yeast depends upon the possession of its ferment, and primarily upon the presence of nuclein and nuclein acid. Its use is not to be confined to any disease but whenever an increased resistance of the organism is required. Its value has been clinically proven in furunculosis, diabetes, tuberculosis, bronchitis, bronchopneumonia, enteroptosis, cancer and other affections.

The strongest confirmation of the value of yeast has been recently made by Presta and Tarnella.⁵ They found that the body resistance toward infections, smallpox, measles, scarlet fever, and erysipelas, was very greatly increased, the diseases running a mild short course. He administered the desiccated brewers' yeast. He claims that it is a specific in staphylococcic and streptococcic infections.

The proteid substances of the yeast may increase the vital resistance by serving as food or stimulate the production of antibodies.

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Electrolysis of Metallic Salts in Human Tissues.

This is accomplished by the polarization current—by the monopolar arrangement of electrodes. The body is immersed in a tub of acidulated warm water, which is insulated from every possible contact. The negative pole is connected with the metallic tub, at the patient's

feet, being separated from the body by the intervening mass of water; the positive electrode is held in the patient's hand. In this way weak currents are approximately as available as strong ones since the resistance is greatly attenuated.

Clausin demonstrated that the voltaic current has the power of directing the course of the movements of molecules in whatever physical form they are found.

Arrhénius followed on this step by formulating his theory of ionisation of chemical solutions and the conductivity of electrolytes, making use of the discovery of Van't Hoff for the laws of osmotic pressure.

Dutrochet subsequently described an "subosmotic action" of the voltaic current, and Du Bois Raymond and Munk described their analogous conception by the incisive term "mechanical transportation. Gautier spoke of "interstitial electrolysis."

Electrolysis of the human body may prove of vast resource, although with all its theoretic promise there are almost insurmountable barriers that confront us.

Physiology of the Brain.

Stanley Hall has opened up a new path for research along the lines of physiologic metabolism. With the most accurate instruments he has succeeded in computing, although only in a rough way, so far, the reflex action of various emotions on the internal organs. He ventures to explain in a scientific manner the changes in the epidermis and muscles of the face that are produced by meditation. The study of physiognomics should some time receive the dignity of scientific support. Apparently it deserves it.

The Lacunæ of Cerebral Disintegration.

Ferrand, in a recent work on the hemiplegias of the aged (*Le Prog Med.*, Spetember 13, 1902) draws attention to some new points in cerebral pathology. Special mention is made of that particular class of clinical cases presenting primarily a "stroke" of rather evanescent character, the patient not necessarily loosing consciousness at the time, but who retains a distinct impairment of locomotion. This special form of hemiplegia—"hemiplegie par lacunes" is dependent upon a chronic sclerotic encephalitis, and is of arterial origin, since the centers of disintegration always occur around a diseased arteriole.

Improvement is the rule, although a number of attacks of slight or very severe nature are to be expected after the first one. The lacunæ are found in order of frequency (determined by the slicing method of Flechsig), in the gray matter, the protuberance, and the centrum ovale, and are constituted, as has been indicated, by a rarefaction of nerve tissue surrounding an arterial twig.

DIAGNOSTICS.

Palpation in Appendicitis.

In any form of appendicitis, palpation is the first and by all means the most important procedure upon which to depend for obtaining testimony. The history of subjective symptoms in any given case may lead one toward other diagnoses, but palpation will give the key-stone among the facts elicited in getting at the history of a case. In acutely progressing cases of infective appendicitis it is often unwise to attempt to palpate the appendix itself, but palpation of the abdominal wall gives sufficient testimony. It is in interval cases, or in cases of appendicular inflammation without infection that we can examine the appendix most readily with the finger-tips. It is essential to have the appendix against some fixed point, in order to examine it accurately by touch through the abdominal wall, and with this object in view we carry it against the iliac or psoas muscles whenever possible; even then it is not sufficiently fixed for good palpation unless we steady the caecum by pressing the abdominal contents toward the right iliac region by making firm pressure with one hand upon the left side of the patient's abdomen. It is important also to avoid exciting a reflex contraction of the muscles of the abdominal wall by "poking" the abdominal wall with the finger-tips. It is best to use three fingers of the right hand, placed rather flatly upon the patient's abdomen, when beginning palpation; or, if that excites a contraction of the abdominal muscles, the whole hand or both hands are used for making general pressure at various points on the abdomen for a moment. Palpation with the whole flat hand gives one the best appreciation of the degree of contraction of the abdominal muscles, no matter whether infection of the appendix is present or not.—Morris, in the *Medical Examiner*, October, 1902.

Diagnosis of Renal Calculus.

Bierhoff believes that he has found a valuable aid to diagnosis of renal calculus. The method consists in distending the pelvis of the suspected kidney with a bland, sterile fluid, by this means hoping to dislodge and cause some movement of the stone. Hematuria will follow this movement. The x-ray can be used to corroborate the diagnosis.—*Medical News*.

Pulsations and Pulsating Swellings.

Pulsations may originate from the great arteries (dynamic, aneurysmal), the veins (pulsating liver), the heart (hypertrophy or dilatation), or may be communicated (pulsating empyema). Pulsations above the level of the third rib belong to the great arteries, below that point to the heart.—Butler.

Characteristics of Functional Murmurs.

Almost all functional murmurs are systolic; the vast majority are heard best over the pneumonic area. From this point they are transmitted in all directions. As a rule they are soft in quality; they are not associated with cardiac enlargements. The murmurs are usually louder at the end of inspiration; they are usually heard over a very limited area. They are especially evanescent in character and they are apt to be associated with anemia.—Cabot.

Diagnosis of Uremia.

It is best to associate the occurrence of uremia into two classes, the acute and chronic. The acute again may be divided into three groups: (1) A known and watched case of kidney disease; (2) a known and watched case of other disease, in which urinary symptoms are now, or have been prominent, e. g., cardiac disease with suppression; (3) an unknown and unwatched case of sudden illness of convulsive or comatose type in a patient previously supposed to be in good health.

In the chronic form the symptoms pass off under treatment but have a tendency to recur.—Smith.

Kernig's Sign.

This sign was first described in 1884, by Kernig. He stated that he had found it present in many cases of cerebrospinal meningitis. He considered the sign pathognomonic of meningitis.

Rudolf (*Amer. Med.*, November 8, 1902,) reports the result of his observation of Kernig's sign in 162 cases.

Kernig described the sign as consisting in the inability to extend the knee passively and fully while the patient is sitting upright, *i. e.*, while the thigh is flexed at a right angle to the body.

Osler has given a more convenient way of applying the test. The patient is allowed to remain horizontal, and the thigh is flexed at right angles to the trunk and then the leg extended as before.

The sign, besides various forms of meningitis, has been found in encephalitis, cerebral hemorrhage, spastic paralysis, arthritis, typhoid fever, uremia, sciatica.

Rudolf concludes as follows :

1. Inability to passively extend the knee fully while the thigh is at right angles to the body, *i. e.*, Kernig's sign, was present in over 60 per cent of all hospital patients examined.

2. Kernig's method is to place the patient in a sitting posture and then extend the knee. A more convenient way of applying the same test is that mentioned by Osler, in which the patient is kept recumbent and the thigh is placed at right angles to the body and then the knee is extended.

3. A procedure having advantages over both of these methods is first to extend the knee fully, then flex the thigh on the pelvis and measure the angle at the hip. Thus only one angle requires to be gauged instead of two and hyperextension of the hip (showing muscular hypotonus) can be measured.

4. There is a great proneness in meningitis to increased muscular tonus, which is most apparent in the muscles of the neck and in the hamstrings. This hypertonus, occurring in meningitis, is probably due to cerebellar irritation, and conversely cerebellar irritation is probably the explanation of Kernig's sign in meningitis.

5. Inability to extend the knee fully with the hip at right angles to the body, or to flex the hip to a right angle while the knee is extended, occurs in many conditions besides meningitis.

Among such conditions are cerebellar diseases and diseases of the upper neurons of the motor tracts, acute eye troubles, disuse of the lower limbs for some days, as in recumbency, local conditions in these limbs as sciatica, arthritis and contractures, old age etc.

6. When Kernig's sign is well developed in a recently healthy in-

dividual who has fever and none of the conditions mentioned then it is a valuable sign of meningitis, and this is probably, at least partially, in the cerebellar region.

7. For the purposes of greater clinical accuracy, it is urged that writers upon this condition express the angle at the knee or hip in degrees, rather than mentioning the presence or absence of the sign.

Splitting of the Second Pulmonic Sound.

The early diagnosis of cardiac insufficiency is extremely difficult. Ordinary symptoms do not develop at once, and in certain conditions may not be prominent. Galli calls attention to the splitting of the second pulmonic sound as a sign of cardiac insufficiency. This is best heard over the pulmonic area, in the second intercostal space to the left of the sternum. Reduplication of the diastolic sound is not heard in health; when present it signifies weakness; he explains it on the grounds that the right ventricle hypertrophies much more readily than the left. According to the severity of the cardiac weakness the sound may be audible on inspiration, or on inspiration and the beginning of expiration; or it may be continuous.—*Munch. Klin. Woch.*

Hypochloruria in Acute and Chronic Diseases.

Dr. G. Campanella (*Gazzetta degli ospedali e delle cliniche*, August 10, 1902,) calls attention to the importance of hypochloruria in diagnosis. Sodium chlorid is a principle that is retained in the body in some pathological conditions. We must speak, therefore, not of a hypochloruria of the blood or of the tissues, but of a hypochloruria in the elimination, in the urine. The diminution of chlorids in the urine has been variously attributed to the increase of perspiration (in fever), to a diet lacking in sodium chlorid, to lowered blood pressure, to disease in the renal epithelium, etc. The decrease in the chlorids cannot be accounted for, in the author's opinion, by an increased elimination in the sweat, for the perspiration, even in fever, contains a very small percentage of sodium chlorid. The same is true of changes in diet. The blood pressure has a great deal to do with the diminution in the amount of chlorids, but changes in the blood pressure alone do not explain hypochloruria in acute and chronic diseases. Lesions in the epithelium of the renal parenchyma affect the process of filtration and secretion going on in the kidney, and diminish or increase

the amount of chlorids as the case may be. The author calls special attention, however, to the influence of the nervous system on the elimination of chlorids. It is known that irritation of the sympathetic nerve, for example, alters the qualities of the urine, and that nervous and psychical excitement or great depression of the nervous system, as well as organic lesions in the cerebrospinal system, exercises a retarding influence upon chlorid elimination. Is it not possible that sodium chlorid exists in these morbid states in the body in an isomeric and isotonic form which has a much less marked diffusibility than in normal organisms? Nature seeks to keep within the body and retard the elimination of all substances that are needed for the life of the tissues, and sodium chlorid is such a substance.—*N. Y. Medical Journal.*

Malignant Growths.

Sarcomata, including endotheliomata, often occur in childhood, in young adults or in middle life and they produce tumors often of rapid growth in those which reach a very considerable size. The spindle-celled sarcomata situated often between the muscles or between fascia has a slow growth and semi-benign nature. The giant-celled sarcomata taking origin often from the medulla of bone also has a slow growth and at times a semi-benign character. The round celled sarcomata taking origin in almost every kind of connective tissue have often an extremely rapid growth and produce tumors which in a short time reach a large size.—Levings in the *Clinical Review*.

THERAPEUTICS.

In Charge of W. L. JOHNSON, M.D.

Brewers' Yeast in Therapeutics.

Ullman (*Am. Med.*, October 11, 1902). From what deduction can we argue that brewers' yeast is of value to the body?

The study of immunity has taught us that the natural resistance of the body is due to one of several causes.

1. The fixed and movable cells have an inherent property of secreting a substance proteid in character which acts protective to the organism.

2. Metchnikoff's photographic action of the polymorphous leucocytes acting (*a*) chemotaxic and (*b*) by secreting a substance germicidal in character.

3. The body is capable of producing under stimulation of certain proteid enzymes the antitoxins, as seen in the production of an anti-toxic substance in diphtheria and tetanus.

4. When the body has lost its resistance the presence of a secondary agent may retard or inhibit the primary infection, as in Coley's toxin injections in sarcoma.

Brewers' yeast is rich in nuclein, and nucleic acid is capable of producing leucocytosis, thereby increasing the body resistance. It also increases the vigor of the nervous system.

It has proved itself useful in indolent ulcers; when applied pure, granulations readily form. In septic conditions, applied directly to the slough, the necrotic tissue is thrown off and granulation follows.

Doyen of Paris notes an almost specific action of a derivative of yeast in staphylococcic injection, comparing its action to that of anti-toxin in diphtheria.

Moses in 1852 used brewers' yeast in furunculosis. It has been used in smallpox. Landau used it as an injection in vaginitis and leucorrhea, 10-22 cc. It has been used for enteroptosis, the metiorism it produces being beneficial. In putred sore throat, Smith in 1852, used it. In diabetes it has proved of benefit, and also in carbuncles, tuberculosis, certain pneumonias, bronchitides, habitual constipation and even cancers.

Glycerophosphates — Particularly the Glycerophosphate of Sodium.

Street, (*Medical Record*, October 11, 1902) The glycerophosphates of sodium and of potassium, are each very hygroscopic, and are sold only in a 75 per cent solution of water. Dose, 10 to 30 grains t.i.d. in syrup, or watery solution.

The glycerophosphates supply phosphorus to the tissues in an easily assimilable form, an organic phosphorus.

Lecithin, the phosphorus-bearing substance found in all cells, and especially in the nerve cells, is itself the glycerophosphate of neurin.

Taken by the mouth the glycero-phosphate of sodium is perfectly tolerated. It has no immediate effect that is apparent, but soon the appetite is increased, absorption and assimilation promoted, the liver

stimulated, the flow of bile augmented, nitrogenous waste hastened and phosphatic waste restrained.

The action on the nervous system is a happy one; reflex phenomena are diminished, sleep is promoted.

The cases suitable for administration are neurasthenics, the aged and generally debilitated; it is valuable in convalescence as after grip; and sciatica hypodermically along the nerve tract.

The glycerophosphates are contraindicated in albuminuria, acute gout and acute rheumatism, and nervous states characterized by acute excitability.

Incompatables are lead salts, phosphates and carbonates.

Hypodermically, marked and prompt results followed the injection of 15 to 30 minims once daily of the following:

R	Glycerophosphate of sodium.....	gr. xij
	Sodium chlorid.....	gr. ss
	Distilled water.....	3j

The incidental discomfort of the hypodermic method makes it undesirable save occasionally.

The glycerophosphate of soda is taken agreeably in either the syrup of orange or the compound syrup of sarsaparilla, 10 to 30 grains to the drachm.

The following is given as an effective formula:

R	Glycerophosphate of sodium.....	gr. vijss
	Glycerophosphate of quinin.....	gr. j
	Glycerophosphate of iron.....	gr. ij
	Glycerin.....	3j
	Citric acid q.s. (to complete solubility)	

M. Sig.—To be taken in water before each meal.

Argyrol in the Treatment of Acute Gonorrhea.

Swinburne (*Ibid.*) has used argyrol—the new silver albuminate—in dispensary and private practice and believes it to be superior to all other silver salts. He has used it as an irrigation in solutions 1 to 2000 up to 1 to 500, quart at time, and as an injection, as high as 20 per cent solutions.

1 to 5 per cent solutions are usually used. It is not a patented preparation.

SOCIETY PROCEEDINGS.

MEDICAL SOCIETY OF CITY HOSPITAL ALUMNI.

*Meeting of June 19, 1902; Dr. Given Campbell, Jr.,
President, in the Chair.*

Dr. BRANSFORD LEWIS presented specimens and models illustrative of the different forms of

Prostatic Hypertrophy,

and their bearing on surgical measures for that condition.

DISCUSSION.

Dr. J. P. BRYSON said he had seen nearly every form of prostatic enlargement the essayist had presented, as far as one could judge, during his operative work. Up to 1898 he did the suprapubic and perineal, combined operations. The result of this work was to convince him that if there were prostates that could not be reached by the perineal route, there were also many prostates that could not be reached by the suprapubic route; so that early in 1892 he began doing the operations suggested by Belfield—that is going into the bladder first above and afterwards by the perineum, if he found it necessary, so that prostatectomy became more and more complete.

During the course of this work he had made careful observations and one of the first things that impressed him was that intravesical projections do not offer serious urinary obstruction. He had not seen up to this time and he did not think the essayist had shown here to night, an intravesical projection which would act as a complete urinary obstruction. In regard to ball valve obstructions, he had not seen any pedunculated growths that would act in that way, nor had he seen anything like the 5th specimen, which he thought was a vertical section. However, he did not mean to say that such growths do not occur, only in the 121 operations he has made he had seen nothing like that. Yet there are surprises always awaiting us. All theoretical classifications of prostatic enlargement he thought practically useless

and he did not believe that we are in a position, in the present incomplete state of prostatectomy, to generalize. He congratulated the essayist on showing such appreciation of prostatectomy.

One of the impressions deeply felt by the speaker was that intravesical projections do not, so far as he had been able to observe, make considerable urinary obstruction. They are more in the nature of vesical tumors and the symptomatology as he had observed, corresponds with that which we see in vesical tumors when encroaching upon or growing from the trigone.

Another point he had noticed is that the dilatation of the kidneys and ureters is not so much due to an obstruction at the site of the ureteral outlet as to a backward pressure of the urine in the hypertrophied bladder. The specimen exhibited ought to convince one that they do not, at any rate always, accomplish that result: This is a specimen where a very large prostate was symmetrically overgrown. The obstruction was toward the middle and anterior portion of the prostate. The speaker did a perineal prostatectomy on the patient (who died within the year from an intracranial hemorrhage), and then he exhibited the picture which showed a vesical pouch, just behind the ureter, pushing the wall out so that it ought to have made pressure on the ureter; yet the corresponding kidney was the better of the two.

He also exhibited photographs of specimens of intravesical growths removed by the suprapubic route, and by the perineal route in the same patient. The smaller portions were removed by the first operation, chiefly with ronguer forceps. The patient returned five years afterwards, his condition as bad as when first seen when a perineal prostatectomy was done, resulting in the removal of the whole prostate. The first operation took thirty-two days for convalescence and prostatic symptoms reappeared within three years. The second operation five years afterwards, when the patient was in a much worse condition, resulted in a complete cure. He had seen the patient a short time ago and tested him for residual urine.

The speaker then showed some photographs which he thought bore directly on the question of urinary obstruction from intravesical projections. One showed several masses which were removed by perineal incision at one time. The patient had an attack of erysipelas following the operation and in recovering from that showed no improvement of vesical symptoms. For five years before operation he

had been totally dependent upon his catheter. The bladder was flabby, thin and considerably atrophied except the inner muscular layer. After three months time, no improvement taking place and the patient being in good condition, the perineum was reopened and a third piece of the prostate was removed from underneath the ring at the vesico-urethral outlet. This took away all obstruction at the vesical outlet, and there was no intravesical projection, yet the result was practically nothing. The patient's bladder had still to be emptied by catheter—there was no voluntary urination. After passing through a hot summer the patient came back in a very uncomfortable condition. The bladder was simply opened above (epicystotomy), and after three weeks of drainage the bladder recovered completely. The patient now empties his bladder to within a few drams of clear urine, is altogether comfortable and entirely satisfied with his condition.

A few weeks ago a physician from Illinois consulted the speaker in regard to hematuria. The patient did not arise at night to pass his urine unless he had drunk freely of fluids during the evening and the hematuria was the only thing attracting his attention. Examination of the rectum showed no enlargement of the prostate, but up behind there was a little thickening and stiffening so that he was unable to make out the posterior border of the prostate distinctly. With the cystoscope he found an intravesical projection, *en collarette*, which extended up fully an inch, jutting into the bladder. Felt from the rectum that prostate showed no enlargement at all and there was no residual urine.

To-day he removed a calculus (which he exhibited). This patient is 62 years of age, and eighteen months ago the speaker advised a prostatectomy. At that time, as far as he was able to judge, the patient had no calculus in the bladder. He has a considerably enlarged prostate towards the apex. The cystoscope as well as a suprapubic epicystotomy shows no intravesical projection whatever and yet he has a deep pouch, so deep that this large calculus was imbedded in it. The bladder was much hypertrophied and the symptomatology of vesical calculus was obscure.

Among the worst cases the speaker had had was one which would probably correspond to the 4th specimen shown. In this case he removed a mass about the size of a tangerine orange by the suprapubic incision. Some of the bad cases required an epicystotomy be-

fore the perineal operation and he exhibited a picture of one of these cases. Patient was a physician who had not previously used the catheter. Seized with sudden retention, the catheter failed to give relief. It could be pushed in a great distance but no urine could be obtained. A physician in Illinois had punctured the bladder above and the result was a pre-vesical abscess, so the speaker did an epicystotomy and drained for ten days, 1,920 grains of prostate were removed, all by the perineal incision. It is a fibrous prostate with some discrete glandular tumors, one of which is shown in the picture.

The case alluded to by Dr. Lewis in which the Bottini operation failed was a very interesting one. It was a true *en collarette* projection. The symptomatology, as the speaker got it from the patient was vesical irritability but he did not know whether there was residual urine. On looking at the condition and seeing great vesical irritation and hypertrophy from the constant efforts at urination he concluded that the intravesical projection was not causing residual urine. When the Bottini operation was made the cautery knife probably went behind the projection and, in being drawn forward, slipped over it just as we see the cautery knife slip over hard tissue when using it within view. How this happened of course he could not say but he supposed that as it was pushed back it bored a hole through the base of the projection so that there was a hole just opposite the uretero vesical outlet and finger slipping into the bladder and behind the prostate went into this hole, which felt exactly like the uretero-vesical outlet. This stood open and one could get the first joint of the little finger through the hole. Standing wide open this hole took away all the obstructive effect of the intravesical projection. Yet the patient's symptoms were not relieved in the least. The operation of prostatectomy done on him was not a complete operation because, though the vesical symptoms were relieved and the bladder emptied itself completely, a suprapubic fistula persisted for a long time.

In the first case presented the speaker thought Dr. Lewis got more benefit to the bladder in its capacity to empty itself from the suprapubic drainage and rest whereby the bladder was permitted to regain its muscular tone than he did from the removal of the tissue about the neck.

A good deal has been said lately about prostatectomy as a routine measure. The speaker wanted to put himself on record by saying

that he did not know anyone who did prostatectomy as a routine measure. We are all liable to be mistaken about the condition we will find when we attempt a prostatectomy. He believed it was often to the advantage of the patient to do an epicystotomy as a preliminary operation. This he said, was well recognized by all men who are doing this work. He believed that all operators who are familiar with the work and who have done the work for number of years, have come to the conclusion that it is safer to remove the prostate by the perineum whether or not the suprapubic incision is made. He thought, too, we would do well to keep an account of the ultimate results of operations that are more or less on trial, such as the Bottini, which is really a prostotomy and not prostatectomy.

He desired to say again that urinary obstruction is not the only obstruction we have to deal with in prostatic enlargement. There is also a circulatory obstruction which leaves the bladder in a state of venous hyperemia which puts it in about the same condition as that found in old varicose ulcers where the devitalization of the tissue from venous hyperemia plays so important a role in the etiology.

Dr. Jos. L. BOEHM, having assisted Dr. Lewis during the past two years in his prostatic surgery, felt that he was in a position to make a few remarks on the specimens.

The first specimen was from a case that had been under his observation during the operation and also afterwards and he said it was a very good reproduction. The statement that intravesical growth offers no urinary obstruction is not borne out in this case. When we consider that an epicystotomy was performed on this case and drained for one week, he could hardly see how a chronic case could be cured by draining the bladder for one week.

The point brought out by Dr. Lewis that there is no one operation particularly suited to all cases of hypertrophied prostate he considered very important. The mistake is made by a good many general practitioners that the Bottini operation is peculiarly adapted to all cases of prostatic hypertrophy. He had recently, while on a vacation, met a number of general practitioners and was astonished to find this opinion so general. He considered the work done by Dr. Lewis highly complimentary and he himself had been deeply interested and much instructed.

Dr. N. W. SHARPE said that to the general surgeon the operation

of prostatectomy, whether suprapubic or perineal, unquestionably appeals as a surgical procedure, and in the long run such operations that may justly be classed as surgical procedures are the ones that will abide. This, however, was in no sense a disparagement of the electrical incision. He was inclined to think the scope of its usefulness will be increased within well restricted peripheries in the future. He had been assured by Dr. Lewis that with the cautery knife incisions into comparatively firm structures may be made. If this is a fact it seemed to the speaker that the skilled genito-urinary surgeon will undoubtedly be enabled to do yet more for prostatic urinary obstruction by means of the cautery knife; in which case this procedure will be put on a more substantial basis than it now enjoys. Dr. Sharpe adverting to one of the cases, which might be called one of the second degree, stated that it seemed entirely possible to make two lateral incisions converging in the depth of the prostate and thus cut out a section. This would undoubtedly open the urinary channel and if the objection was raised that it would leave a bit of floating prostate in the bladder he thought this should be caught with a lithotrite or other suitable forceps and removed as we do a calculus.

Coming back to the original proposition it seemed to him that prostatectomy is the surgical operation and will never be superseded. Dr. Lewis' suggestion that "the operation should be selected to suit the case" is unquestionably correct; and is merely a reiteration of a well known working rule.

Dr. E. S. SMITH said the internist is often asked whether a patient can be subjected to certain operations. We know, of course, that the ultimate result and the most serious result of prostatectomy is first on the kidney secondarily on the heart—that is we get a backwater on the kidney and a high tension on the heart,—the heart of arterio sclerosis in which there is later a breaking of compensation, and some of these cases die as cardiac cases, so that the question comes up as to whether or not these cases can bear surgical interference. In his experience, which had been limited in these cases, the majority he had seen bore the operation well. Of course, cases where the kidney destruction was thought to be great and where cardiac compensation was greatly disturbed, advice was given against operation. It seemed to him therefore, that some of these cases can be operated upon and some can not be operated upon. From his observation of cases that

had come to autopsy in which the advice had been against operation on account of the probable affection on the heart and kidney, it seemed that these cases would have lived a very short time even if the Bottini operation had been successfully performed. The operation could be put aside on the ground that it is indicated in cases that cannot bear a surgical procedure and the majority of such cases would probably be better if left alone; so that he felt it must be demonstrated that the Bottini operation is effective—that is that its results in selected cases are permanent and as effective as other methods.

Dr. FRANCIS REDER said that next to operations for cancer, operation for prostatic enlargement is one of the most unsettled in surgery. Dr. Bryson made the remark that in its present state of incompleteness (the speaker presumed he had reference to the operation), he could not see how any surgeon could do anything at the present time. The operation will always remain an incomplete one. It is anatomically impossible to enucleate that gland. It is a hyperplasia of the glandular tissue which makes it extremely difficult to attack. You may go in any one of the routes and attack with a rongeur forceps or a spoon and the thought is constantly before you "have you taken away enough of this?" You feel most unsatisfied with all your work and can simply think what the outcome will be. In an operation of this kind he thought that many cases should be let alone, but in some cases something must be done and the only hope lies in operation. The operator will be rewarded in his operative work, perhaps, not in the technique because there is simply one technique in the method of taking away as much of the glandular tissue as he thinks is necessary, but in the foulness of the urine and the condition of the kidneys.

Dr. GEORGE HOMAN said he gathered from what had been said that preceding this advanced condition there is always more or less frequency of urination. He desired a little light on that point. He recently had an elderly patient with a trouble not of this character but who suffered from frequency of urination, especially having his rest disturbed and a tendency to dribble. The urine was examined—there had been no opportunity to examine the prostate—and he found a low specific gravity but clear, and no evidence of an inflamed condition of the bladder. In order to relieve the annoyance of having to rise at night, the speaker had instructed him in the use of the soft catheter. The patient had used this with much relief, one night not getting up at all where formerly he would have had to rise half a dozen times.

The speaker said he was not sure that he did right in this matter though it seemed to him the condition demanded some relief, and under the circumstances nothing else presented. He asked whether this was probably a case going on to enlargement of the prostate, or a hypertrophied condition of the bladder. He would like some explanation as to the cause of the frequency of urination. There was nothing to show an inflamed condition of the bladder or obstruction of the flow, and he asked if it might be due simply to atony of the muscular coat.

Dr. LEWIS, in closing, said in regard to Dr. Homan's patient that the frequency of urination might, of course, come from any one of a number of different causes. Whether it was caused by an obstructive condition of a hypertrophied prostate could be easily ascertained. By simply putting the finger in the rectum it would be easy to tell whether there was any enlargement of the prostate; have him void all he can and then introduce the catheter to see if there is any residual urine. The frequency might be due to a simple continued retention making an overflow. Sometimes in addition to obstruction there is an infection of the urine with resulting irritating symptoms.

He desired to say that his position in the matter of prostectomy is not taken for the purpose of combating the position of any one gentleman, but to make a protest against the almost universal habit, which can be discerned in the writings of the best and ablest men, such as Murphy, Ferguson, Deavers, and others, of advising one operation to the exclusion of all others. He considered this a erroneous position to take. He could not believe that either the perineal, or Bottini, or suprapubic or the combined perineal and suprapubic operation fitted all cases. He desired to dispel any idea that he was opposed to any one person in this work. He wanted to bring out as a precaution to general operators in this field to be more discriminating in the application of these methods and not to apply any one in a routine way to all cases.

Dr. BRYSON asked if the speaker thought this inclination was any more apparent in general operators than it is in Bottinists.

Dr. LEWIS replied that he put the Bottinist in the same position. It is sometimes proper to advocate a Bottini operation, not as a routine procedure but in selected cases; and he was just as firm in his belief in the Bottini operation in such cases as he ever was. We should be, however, better able to select our cases than formerly.

The mode of applying the electrical incision as advocated by Dr. Wishard of Indianapolis is going to prove a valuable addition.

As to intravesical projections producing obstruction, the speaker thought the position of Bryson, at least in one instance of the specimens exhibited, was definitely refuted. In this case the patient had been drained through the perineum following the perineal prostatectomy done by Dr. Bryson, but it had failed to afford relief; whereas after the drainage and the suprapubic removal by the speaker there was complete cure. He could not see that a drain through the suprapubic opening could have had more curative effect than a drain in the perineum. It was the removal of the obstruction that had produced the cure. He believed it is pretty well proven that an intravesical growth is an obstructing factor. We should look at this matter in a broad gauge-way and not in a routine way; which is really the gist of my argument.

He desired to protest against one remark of Dr. Sharpe's that "prostatectomy is, after all, the surgical procedure and the one on which we will have to rely." It is that argument to which the speaker is opposed for the reasons given.

ALUMNI ASSOCIATION OF THE MEDICAL DEPARTMENT WASHINGTON UNIVERSITY.

*Meeting of October 9, 1902; Dr. L. H. Behrens,
President, in the Chair*

Dr. A. V. L. BROKAW read a paper (see page 321, November issue) on the

X-Rays as a Therapeutic Agent.

DISCUSSION.

Dr. H. N. CHAPMAN was glad to hear the paper and glad to know that Dr. Brokaw differs from the Eastern manufacturers on what seemed vital points, especially that about not producing a dermatitis. In the work he had been doing he found it absolutely essential, in cases that were at all severe, to produce a dermatitis before he could do the patient any good. Unless this is done we do not know that the patient has received the physiological effects of the rays.

He had four cases of cancerous growths of the breast where the breast had been removed. In three cases unfortunately secondary manifestations had set in before the patients were exposed to the ray. In these there had been decided tanning produced without any raw surface, but absolutely without result. In the fourth case the patient was exposed to the rays earlier in the course of the disease—before any secondary manifestations had set in, and that patient has gained in weight.

In the speaker's opinion there was no question but that patients should be seen immediately after an operation, especially in mammary cases, and exposed to the ray.

The time is coming, Dr. Chapman believed, when the public and the physician will educate patients to seek the treatment by x-ray speedily. We all know how women will hide the lump in their breasts and let no one know of it until the pain and the advancement of the disease compels them to seek relief. If these people are instructed to believe that they will probably receive benefit they will sooner seek this treatment and many lives will be saved.

He was glad to see emphasized by the essayist the careless and promiscuous use of the x-ray. A great deal of harm may be done in this way, possibly not in a direct way, but a patient who has had the ray ineffectually applied will not afterwards go to the operator again; whereas if he had gone to a competent operator at once he would have been better influenced.

There is no question that there is a tremendous timidity about producing a dermatitis. The speaker thought the exposure should be pushed until a dermatitis is produced.

In a case he had recently seen the growth began in the tongue and the sublingual glands had been removed, the opening made for this purpose having healed. The patient had been subjected to twenty-two radiations by some operator without result and the speaker pushed his radiations until a dermatitis was set up. This effected a remarkable result locally. The patient went to bed suffering with a headache and had a very free diarrhea. Two days later he had a chill. The ulcerated mass was outlined by inflammatory tissue. When dressing the wound he found all the inflammatory tissue had disappeared and the cancerous mass healing rapidly. Unfortunately the extent of the growth was so great that it was impossible to reach it all.

While the patient was in bed the growth spread rapidly and he finally died. The speaker believed if this case could have been seen earlier there would have been a good chance for his recovery.

Dr. JONAS said good results had been obtained in tuberculosis of the skin and cancer of the skin but in more deeply located cancer the results have not been so good, recurrences taking place.

He called attention to the fact that we are able to stop the pain in swellings—chronic swellings of the joints when patients suffer intensely. They feel better after a few applications and are anxious to have the treatment continued.

Dr TUHOLSKE could not claim any experience in the matter of the x-ray but he was not indifferent to its use. In the beginning it was used as a diagnostic agent and it is very strange that now it is a remedy in the hands of good men. Like many good things it was first made use of by pretenders who used it for the cure of all ills in the world until in their innocence they got good results and then it was taken up by the regular profession. It is too early to make any authoritative statements in regard to its usefulness. We know so comparatively little of the modus operandi of the x ray. One thing is clear and that is we are capable of producing a great deal of external disturbance where we set up a dermatitis even when the skin is thoroughly asepticized. The effects which he had seen were only produced after a dermatitis had been produced, or where there was a local evidence of the dermatitis. In the speaker's office there had been treated a number of cases of trouble about the forehead and nose which, after a number of applications of twenty-five minutes each at a distance of four inches, showed improvement after the part around had become red and irritated. He could not recall a case that seemed to be benefitted until this condition was produced. In cases of cancer of the breast treated by Dr. Jonas in the speaker's office, and later by Dr. Chapman during the summer, dermatitis was produced to a considerable extent yet he failed to see any result except a marked diminution of pain during the application of the x ray.

In one case the speaker had removed a growth from the temple which seemed very superficial. This case was under the care of Dr. Chapman during Dr. Tuholske's absence. Some months after the removal of the growth the glands in front became involved which he wanted to excise but the patient objected. It was then he turned the

case over to Dr. Chapman. The patient claimed he received much benefit from both the x-ray and the static current. The peculiar thing about the case is that the deeper tissues seem to be more involved while the skin is beginning to assume a non-cancerous appearance. It is possible that the peculiarity of the cautery, the peculiarity of the irritation has something to do with the beneficial effect we get from the x-ray that is not obtained with chemical agents. In mammary cases in which there is glandular involvement he had seen no benefit whatever.

Dr. TUHOLSKE thought it was early to say much as to the curative or prospective curative effect of the x-ray because we know that in carcinoma or visceral carcinoma, as far as we can see now, the effect is local. We must eliminate the question of auto hypnosis—hypnosis by the operator and its effect upon patients who will be relieved of pain by the personal equation of the one who is attending him. He hoped we have an agent that will produce what we are yet unable to produce—a cure in carcinoma. We have seen many remedies brought out that for a time seem curative and then lose their good effect. He did not wish to throw a damper on the use of the x ray—it had gone too far if he would try to do so. He would be too happy to see it prove itself a curative agent for there are a hundred thousand people suffering from cancer in this country and it would be the greatest boon in the world. It benefits and cures lupus and all those superficial inflammations, but in his opinion it has not proven of benefit in carcinoma of deeper growth.

Dr. TUHOLSKE said he thought Dr. Brokaw's radiographs were the best he had seen.

In regard to the question of putting all patients who have been operated on for cancer of the breast under the x-ray treatment the speaker thought this was a point where one might get mixed. Where the operator has removed the axillary glands and got into the subscapular fossa and made a thorough dissection there is little fear of recurrence.

Dr. SIMON had seen some of the cases treated by Dr. Brokaw and was particularly struck with the relief of pain. Quite a number of cases of neuralgia had come for relief and this was relieved almost instantly. This would last for several days and even weeks before the pain would return. Some of the results of this treatment as shown in the photographs seem to be almost miraculous.

Dr. Jos. BOEHM said he had been following the work of Leonard of Philadelphia during the last few years. Leonard has done some very fine work on the kidneys. A peculiar thing in the work is a statement by Leonard and others that phosphatic calculi are not shown up by the x ray. Recently he had been in Chicago and heard a good deal of the wonderful work being done there. One of the diseases that it is claimed is benefitted by the x-ray is old gonorrhreal epididymitis. It may be possible that not only will the pain be relieved but the nodules might disappear and the patient be relieved of sterility.

Dr. HINCHEY mentioned a case of the breast being removed with the glands taken out over a year ago and the husband of the woman told him there had been no recurrence. During the last month the patient had consulted a physician for pains in the region of the liver and the question of recurrence in the liver had come up. The physician however, thought the pains were due to a small fibroid tumor of the uterus.

Dr. M. J. HOPKINS had treated a number of cases and had some very good results, especially in relieving the pain in carcinoma. He now has a case of ulceration about the ear that is showing good results from the x-ray.

Dr. FLOYD STEWART asked in regard to the use of tubes. He had begun by using a high amperage and low voltage but is now using a low amperage and high voltage.

Dr. BROKAW, in closing, drew attention to the fact that too much was being expected of the x ray. He was himself in doubt about the utility of the x ray in some cases. He made no claim that all cases could be cured and had met many disappointments. However, the success that he had met had impressed him very much. If suggestion or hypnotism cured these cases then he felt that he was the most fortunate man living. If he has this power and patients come back he will radiate them again. When a surgical operation is performed and a breast removed, if there is recurrence the surgeon will operate again. No living man has the skill to remove every gland involved and in the most complete operation there is apt to be something left behind. Time will tell whether it is a good thing to subject these people to the x-ray. The most unfortunate thing in connection with this subject is that people go away for a few days and come back experts in x-ray work. He had seen all the good men in the East and knew what they

were doing. He believed that the majority of persons using the x-ray operate with an inferior apparatus and there are bound to be failures with it. He has failures with the most complete tubes and best apparatus obtainable but he gets results where others with cheap tubes fail.

Dr. BROKAW said he was not prepared at this time to take up the subject of visceral malignant growth. As he had stated in the paper he went no further than surface growths. Many cases come to him at a time when he is certain that nothing can be done to control the growth but the fact that the pain is relieved for four or five days and longer shows that there must be something in the treatment. A case of rodent ulcer sent to him by Dr. Simon disappeared after eleven treatments. Whether it will recur or not, of course, he could not say. The photographs shown will speak far better than any description.

That the effect is confined to the skin Dr. Brokaw said is not true. When a case of white gangrene is once seen it will never be forgotten. It is not limited to the surface but goes deeper into the tissue and the x-ray brings this about.

In regard to the voltage he has at the hospital one apparatus with eighteen to twenty-two inch coil, with 220 direct and resistance thrown in to bring it down to 110.

Dr. BROKAW did not agree with Pusey who continues the treatment for months for things the speaker had seen wiped out completely in ten to twelve treatments. Each case should be studied and a tube adjusted to suit that particular case. In other words you should have a great many tubes and find out the one that will produce the result desired. You may have a tube of low resistance and high amperage and per contra the reverse may be true. The coil with which he had had the best results was a thirty inch coil made specially which energizes any tube he had ever seen. That matter is simply a question of technique. The whole subject he said is in its infancy. He watched the development of the subject since 1896 and had seen some curious things. Some people have idiosyncrasies to the exposures. He had seen dermatitis develop in some patients after one exposure while others would receive ten and twenty exposures with the same tube, same voltage and amperage without any sign of dermatitis.

Dr. BROKAW differed with many operators in that he took chances with a high tube, a tube with such penetration that he can see the

heart beat at a distance of twenty feet, or take a picture in thirty-five to forty seconds. Possibly that is the reason why he gets results quicker than others. One should have experience however, before using such a tube in a routine way.

The field of usefulness of the x-ray is very very broad and there are many conditions that can be benefitted by its use. He did not advocate the use of the x-ray to the exclusion of the knife. On the contrary he would use the knife first and then subject the patient to the x-ray treatment especially in cases of mammary cancer. His results have not been better than results obtained by other operators and we must accept the reports of such men as Beck, of New York who cured several cases of carcinoma.

In regard to the liver case asked about, he did not feel prepared to answer because it is not possible in some of these cases to make a diagnosis unless there is a tumor mass to indicate that there is a cancer.

The question of expense is very considerable as you should have a large number of tubes on hand and these are costly. Disrepute is brought upon the work by those who use a cheap, inferior apparatus.

THE BETHESDA PEDIATRIC SOCIETY.

*Meeting of October 10, 1902; Dr. John Zahorsky,
President, in the Chair.*

Dr. ZAHORSKY read a paper (see page 418 this issue) on
The Etiology of Gastroenteric Infection in Infants.

Dr. FISCH read a paper (see page 423 this issue) on
The Bacillus Dysenteriae.

DISCUSSION.

Dr. TUTTLE.—While the discovery of a specific cause of gastro-enteric infection would be very welcome, he could not help but feel that it is impossible to accept this theory without abundant and repeated demonstration. The numerous germs present in the intestinal canal speaks for a multiplicity of infections. And an increase of

the ordinary varieties in the food is followed by intestinal disturbances. It would be best to receive this discovery with great caution.

Dr. BLEYER asked if the bacillus dysenteriae was found in all cases examined.

Dr MOORE asked if the organism has been demonstrated in the blood.

Dr. ZAHORSKY recalled the preliminary report of Duval and Bassett. From their statements it is impossible to doubt that the bacillus dysenteriae has some influence. The organism was constantly found and the blood gave the characteristic reaction. Our examinations confirm this report.

Dr. FISCH felt that the etiology of gastroenteric infection was by no means firmly established. Errors in bacteriological work are with great difficulty excluded. The bacillus dysenteriae resembles races of the colon bacillus. It is possible that some of these can so alter the blood as to produce some agglutination. Certain toxemias may produce the blood changes. Then the dilution of the blood in making the test is difficult. Normal blood will give the reaction in low dilutions.

In answer to Dr. Moore's question he stated that the bacillus has been demonstrated in the blood in cases of dysentery.

It should be remembered that the function of the colon bacillus is to prevent intestinal decomposition, by inhibiting the growth of putrefactive germs.

Dr. SAUNDERS read a paper (see page 415 this issue) on

Antipyresis in Children.

DISCUSSION.

Dr. TUTTLE declared that he had been taught in a school which paid little attention to the treatment of fevers. But he had found that it was necessary to treat the symptoms in private practice. Parents demanded it. The great cry against coal-tar antipyretics is unfounded. The alleged danger is not based on facts. These untoward effects were frequently seen in the earlier days, when enormous doses of the drugs were given. With reasonable care their use is without danger. He has treated mild cases of typhoid with the internal administration of a coal-tar antipyretic and with a good result. He never uses these drugs in pneumonia.

Dr. LIPPE called attention to the fact that hydrotherapy when improperly used may cause the fever to rise. The external cold contracts the arterioles and there is an accumulation of heat internally. He had seen severe vomiting and depression from excessive doses of pilocarpin.

Dr. JOHNSON had good results from the ice caps in mild febrile movements. He believed in the use of internal antipyretics, the danger from their administration has been over estimated.

Dr. NEWCOMB reported that the fever in infants may not fall by the ordinary external application of water. In these cases a rectal injection of water will reduce the temperature.

Dr BLEYER recalled a case in which forty-five drops of tincture of veratrum viride was given without result. It must have been a worthless preparation.

Dr. SAUNDERS.—For many years he has been advocating the use of pilocarpin in erysipelas and the exanthemata. Recently he treated a severe case of scarlet fever, accompanied by very active delirium in a girl aged 12 years, by giving $\frac{1}{12}$ grain of pilocarpin and 5 grains of chloral hydrate every two hours. The salivation was profuse, the delirium ceased and convalescence was established in three days. He often gives chloral in small doses every two or three hours. It induces short periods of rest. But pilocarpin does not act if the fever is very high. The fever must be reduced by hydrotherapy and then the drug administered.

But the pilocarpin may interfere with the nutrition. It must be given in the interval.

MONCORVO spoke highly of antipyren, but he prefers phenacetin to all coal-tar antipyretics. In typhoid he uses phenacetin during the first week.

Sponging is useless in high temperatures, as it merely contracts the blood vessels and causes an augmentation in the internal heat. The spray bath is one of the best antipyretics in children.

NEW YORK CORRESPONDENCE.

NEW YORK CITY,
November 15, 1902. }

Editor COURIER :

More than three score suffering cripples were brought by their anxious mothers yesterday to Dr. Newton M. Shaffer's clinic, at the Cornell Medical College, Twenty-Seventh street and First avenue, in response to the announcement that Dr. A. Lorenz had agreed to treat poor patients free of charge there and at other clinics during his stay in New York.

The big waiting room at the dispensary was crowded long before the hour for the opening of the clinic, and the mothers gossiped in groups and recounted to each other in English, German, Italian and Yiddish, the wonderful things they had heard of the great Vienna surgeon.

The children seemed happy in spite of their infirmities. There were sweet-faced little girls with legs in steel braces; club-footed boys with clumsy shoes; hunch-backs, little ones on crutches and a plentiful scattering of little maimed short-legs, who were unable to stand upright even with the aid of the orthopedic devices.

Dr. Shaffer assisted by Drs. Fitzhugh and Murphy examined each case and made a rough division of the patients into two classes; those who might prove suitable cases for Dr. Lorenz and those whose deformities were not of the class on which Dr. Lorenz operates.

The greatest anxiety was shown by the mothers and even the patients, in the decision of Dr. Shaffer. As soon as he announced that a certain patient was suitable for Dr. Lorenz to operate, gladness was depicted on their countenance.

Little Rose, a pretty nine-old girl smiled when the doctor put her name on the list of those for Dr. Lorenz. "Will my leg be straight and strong after that?" she asked. She clapped her hands with joy when Dr. Shaffer told her that Dr. Lorenz would cure her.

The fame of Dr. Lorenz as an operator for congenital dislocation of the hip has become widespread among the laity, and it could be readily gathered from the remarks of the mothers how much they trusted in this surgeon.

America boasts of her surgeons, many of whom have a world-reputation, but to Dr. Lorenz is justly due honor and the American profession are not slow to bestow honor where it is due.

The clinics at the Post-Graduate are largely attended this year.

A very rapid and skillful operator is the rhinologist, Dr. Beaman Douglass; I saw him remove a turbinate body in twenty-eight seconds.

A series of popular medical lectures will be given at the college of Physicians and Surgeons. The lectures will be delivered at 5 o'clock every Wednesday afternoon during the winter months. The subjects of the lectures cover a wide field and include anthropology, zoology, psychology and sociology.

The annual meeting of the National Association for the study of Epilepsy and Treatment and Care of Epileptics was held on November 12. The proceedings were divided into an afternoon and evening session. Special interest was taken in the address of the President, Dr. Frederick Peterson. He declared that the purpose of the association was to promote the general welfare of epileptics and to study the etiology and treatment of this disease. Much greater interest is taken in this subject. In nineteen states of the United States, special provisions have been made for the care of epileptics. The epileptic is no longer a social outcast and burden to his family. Much good has been accomplished in educating them. Some advance also has been achieved in treatment.

From a press report I have gathered the interesting news that a young physician, Dr. Leureaux, of Brussels has discovered a specific serum against pertussis. This uncontrollable affection is said to yield to this serum inside of ten days. If this is true another tremendous advance in serum therapy will have been made.

Considerable discussion has been aroused by the peculiar case of Nellie Corcoran, aged 19 years, who suddenly became unconscious. She was taken to the St. Vincent's Hospital, where she continued in her unconscious state in spite of all therapeutic measures for twenty days, when death ensued. The most expert diagnosticians and neurologists were unable to make a diagnosis during life.

As demonstrating the love of the mother for her child an interesting case came to my notice. The woman was tuberculous and was treated for fractured spine. She jumped from a burning tenement in the Ghetto district with a four months old baby in her arms. She sustained a fracture of the spine and concussion of the brain. She spoke in Yiddish in her whispering voice, and with sparkling eyes repeated again and again to the doctor how happy she was that her child was not killed. She said, "I jumped out of the window backwards but was anxious lest I turn in the air and crush him on the pavement."

Mothers of every tribe are alike the world over - always our best friend.

EDW. B. JACKSON, M.D.

BOOK REVIEWS.

The Courier of Medicine Company will mail, postpaid, any book reviewed, on receipt of price.

The International Text-Book of Surgery. By American and British authors; edited by J. Collins Warren, M.D., LL.D., professor of surgery in Harvard Medical School; surgeon to the Massachusetts General Hospital, and A. Pearce Gould, M.S. F.R.C.S., surgeon to Middlesex Hospital, lecturer on practical surgery and teacher of operative surgery, Middlesex Hospital Medical School, etc. W. B. Saunders & Co., Philadelphia. 1902.

Volume II.—Regional Surgery. With 471 illustrations in the text and 8 full page plates in colors.

Among the contributors to this volume we note the following distinguished surgeons: W. T. Bull, W. B. Coley, E. T. Collins, J. B. Deaver, C. Fenger, F. Henrotin, R. Matas, J. J. Putnam, A. W. M. Robson, H. Tuholtske and others.

The excellent character of this work begun in Volume I, is continued. Special attention is given to diagnosis and operative procedures. Operative technic is more thoroughly elucidated by the fine illustrations.

Of special value are the chapter on the diagnosis and treatment of abdominal diseases. Charles McBurney has written the fine chapter on the Surgery of the Vermiform Appendix. W. T. Bull and W. B. Coley write the chapter on Hernia. In fact, all the different subjects are written by specialists in that particular department of surgery.

“The International Text Book of Surgery” deserves the highest place among the books on this subject.

A Text-Book of Pathology and Pathological Anatomy. By Dr. Hans Schmaus, professor in the Pathological Institute at Munich. Translated from the sixth German edition by A. E. Thayer, M.D., instructor in pathology. Edited, with additions, by James Ewing, M.D., professor of pathology in Cornell University

Medical College, New York. In one octavo volume of 597 pages, 351 illustrations, including 35 colored inset plates. Cloth, \$4.00, net. Lea Brothers & Co, Philadelphia and New York.

Several new text books on pathology have appeared in the last two years. It is really difficult to decide their comparative merit, since pathology is undergoing such constant changes that the interval of one year makes considerable difference. This work excels especially in the excellence of the illustrations.

The work is divided into two parts: Part I, treats of general pathology. Part II, gives a comprehensive description of special pathology. We regard some descriptions too brief to be of much practical value.

This book will be found especially valuable to the student. The method of treating the subject, classification and description, is such that it will be a great aid to the study of pathology. Pathological physiology receives less attention than pathological anatomy.

The Practical Medicine Series of Year Books, Comprising ten volumes on the year's progress in medicine and surgery, issued monthly. Under the general editorial charge of Gustavus P. Head, M.D., professor of laryngology and rhinology, Chicago Post-Graduate Medical School. The Year Book Publishers, 40 Dearborn street, Chicago. Price, for the Series, \$7.50.

Volume I.—General Medicine. Edited by Frank Billings, M.S., M.D., head of the medical department and dean of the faculty of Rush Medical College, Chicago, and J. S. Salisbury, M.D., professor of medicine, Chicago Clinical School. October, 1902. Price of this volume, \$1.50.

This is the first volume of the second series. The work has been well received. The handy books give general satisfaction.

This work contains everything new on tuberculosis, pneumonia, diseases of the heart, pericardium, bronchi, pleura, and general infectious diseases.

Volume X.—Skin and Veneral Diseases; Nervous and Mental Diseases. Edited by W. L. Baum, M.D., Hugh, T. Patrick, M.D. September, 1902.

Dr. Patrick has accomplished the task of collecting and commenting on the year's advances in Nervous and Mental Diseaseses in a very satisfactory manner. The volume of this year book series, are for the practical use of the general worker as well as for those specially

interested. Good judgment has been shown in adapting them to this use.

Very technical subjects are passed over lightly or merely mentioned. The conditions which demand study on the part the physician in his daily wars are described as fully as need be, from the literature thereon which has appeared in the past year. Astereognosis, the Babinski reflex, Kernig's sign, and the pupillary reflexes have been much written about and Patrick has happily extracted the essence of a great number of articles. The neuroses come in for considerable discussion. Brain and cord lesions are well written up. Meig's "Chronic Hereditary Trophedema" is allowed a number of pages and is illustrated. Recent discussions of classifications and treatment of psychoses aid in advancing systematic observation.

International Clinics: A Quarterly of Illustrated Clinical Lectures and especially prepared articles on Medicine, Neurology, Surgery, Therapeutics, Obstetrics Pediatrics, Pathology, Dermatology, Diseases of the Eye, Ear, Nose, and Throat, and other topics of interest to student and practitioners. By leading members of the medical profession throughout the world. Edited by Henry W. Cattell, A.M., M.S., Philadelphia, U. S. A.; with the collaboration of John B. Murphy, Chicago; Alexander S. Blackader, Montreal; H. C. Wood, Philadelphia; T. M. Rotch, Boston; E. Laudolt, Paris; Thomas G. Newton, Philadelphia; James J. Walsh, New York; J. W. Ballentyne, Edinburgh and John Harold, London; with regular correspondents in Montreal, London, Paris, Leipsic and Vienna. Volume II. Twelfth Series, 1902. J. B. Lippincott Co., Philadelphia.

Two cases of immediate death caused by the spinal injection of cocaine—F. Legnen, reports two fatal cases from spinal injection. Both were, however, in bad condition for any anesthetic. The first had had two apoplectic attacks on the day previous and was a heavy obese subject with emphysematous lungs. The second case was a strangulated hernia and patient received cold, with pinched face of ashy color, a weak voice and dry tongue; a pulse of 140, subnormal temperature.

In both cases death followed immediately the injection of the cocaine, and could only be attributed to direct action on the medulla. The author felt impelled to abandon the method, although he had seen good results from its use, and believed within certain limits it must remain as an available method of anesthesia.

Treatment of Bladder and Rectal Troubles in Nervous Diseases. L. R. Müller deprecates the use of the catheter even where there is considerable residual urine and contends that the bladder will spontaneously evacuate itself more safely than it may be emptied artificially. Cystitis adds such suffering to the already deplorable state of these patients that Dr. Müller's observations to the effect that a point is reached in myelitis and other transverse lesions of the cord when a single daily evacuation of the bladder will occur spontaneously from a dilated and anesthetic viscous are encouraging, and may teach us to postpone the use of the catheter with its dangers of infection.

The cases are quite instructive in demonstrating the management of the features spoken of, often the most troublesome of all the symptoms.

Resection of the Cervical Sympathetic.—Prof. Thomas Jonnesco concludes his lecture on this subject by saying "It is evident, therefore, that resection of the cervical sympathetic will occupy a prominent place in the future progress of surgical science."

Compend of Special Pathology. By Alfred Edward Thayer, M.D., assistant instructor in gross pathology Cornell Medical College; pathologist to the City Hospital; formerly fellow in pathology Johns Hopkins University; instructor in anatomy, Yale Medical College; professor of pathology and bacteriology, West Virginia University. With 34 illustrations. Price, 80 cents. P. Blakiston's Son & Co., Philadelphia. 1902.

This is really very complete, and in amount of reading may be called a hand-book. For students it will be found very satisfactory.

Circulation of the Female Genitals. A Set of Seven Charts. By Byron Robinson, M.D. Chicago. Price, \$1.00. E. H. Colgrove, Chicago. 1902.

The Physicians' Visiting List for 1903.—Lindsay & Blakiston's. Fifty-second year of its publication. Price, \$1.00. Sold by all book-sellers and druggists. P. Blakiston's Son & Co., Philadelphia. This well-known Visiting List will continue to give satisfaction. It is well bound in leather and easily passes into the coat pocket.

Physicians' Protective Accountant.—Comprising an Accountant's Ledger, twelve Visiting List Sections and an elegant Leather Case. Price, complete, \$2.00. The Clinic Publishing Co., Ravens-

wood Station, Chicago. This is a pocket account-book and visiting list, which is a great improvement over some which are published. The publishers have tried to make a method of keeping accounts that will stand the test of the courts.

The Medical News Visiting List for 1903. Weekly (dated, for 30 patients); Monthly (undated, for 120 patients per month); Perpetual (undated, for 30 patients weekly per year); and Perpetual (undated, for 60 patients weekly per year). The first three styles contain 32 pages of data and 160 pages of blanks. The 60 patient Perpetual consists of 256 pages of blanks. Each style in one wallet-shaped book, with pocket, pencil and rubber. Seal Grain Leather, \$1.25. Thumb-letter Index, 25 cents extra Lea Brothers & Co., Publishers, Philadelphia and New York.

The Pocket Reference Book and Visiting List for 1903.—[Perpetual]. Price, \$1.00. J. H. Chambers & Co., Publishers, St. Louis, Mo. This is a neat book, bound in leather, and such a size as to fit into the inside coat pocket. The first 25 pages are devoted to matters which are helpful to the practitioners at the bed side, such as table of antidotes to poisons, dose table, etc. Besides a Weekly call list it contains pages for Clinical record, Obstetric record, bills rendered, cash account, etc. This will be found a very satisfactory visiting list.

Transactions of the Medical Association of the State of Alabama.—Meeting, Birmingham April 15-18, 1902. Besides much matter pertaining to the organization of the Medical Association, this volume contains some very important original articles.

The Courier of Medicine Company will mail, postpaid, any book reviewed, on receipt of price.

INDEX TO VOLUME XXVII.

JULY—DECEMBER, 1902.

Original Contributions.

Aneurysm of the transverse aorta and innominate artery—W. T. Coughlin, St. Louis, 182.

Antipyresis in children, concerning—E. W. Saunders, St. Louis, 415.

Aortic regurgitation and aneurysm, the vessel phenomena in—Elsworth Smith, St. Louis, 262.

Bacillus dysenteriae—Carl Fisch, St. Louis, 423.

Brain injury, report of two interesting cases of—F. B. Shields, Victoria, Texas, 178.

Cecum, the—in relation to the psoas muscle in 310 adult male and 125 adult female autopsies—Byron Robinson, Chicago, 241, 353, 426.

Cellulitis, infective—C. G. Geiger, St. Joseph, Mo., 257.

Consumption, the state's duty in the matter of prevention of—R. O. Cross, Kansas City, Mo., 30.

Deformed noses, the subcutaneous use of paraffin in, report of case—Hal Foster, Kansas City, Mo., 96.

Dermatology, Robert Willan and—W. A. Hardaway, St. Louis, 161.

Diarrhea, the etiology of the summer—John Zahorsky, St. Louis, 418.

Eczematoid dermatitis, an infectious form of an—Martin F. Engman, St. Louis, 401.

Epilepsy, a case of—E. C. Runge, St. Louis, 98.

Epithelioma, two cases of, treated by X-rays—H. N. Chapman, St. Louis, 367

Foot-wear, effect of upon the form and usefulness of the foot—Phil Hoffman, St. Louis, 13.

Gunshot wounds, observations on, during the Spanish-American and Philippine wars—F. A. Winter, Jefferson Barracks, Mo., 1.

Gynecologic diseases without local symptoms—George Gellhorn, St. Louis, 336.

Heart disease, necropy in—Louis Ras sieur, St. Louis, 107.

Hernia, conditions I have found in operating for the radical cure of oblique inguinal—Francis Reder, St. Louis, 167.

Malaria—marked cerebral and spinal symptoms; Kernig's sign present; double tertian—J. T. Moore, Galveston, Texas, 81.

Medical examinations in our public schools—E. A. Donelan, St. Joseph, Mo., 184.

Medical law, working of—G. F. John ston, Lakin Kansas, 101.

Rectum, malignant disease of the—A. B. Cooke, Nashville, Tenn., 20.

Sarcoma, a case of abdominal, in a boy—H. L. Nietert, St. Louis, 93.

Tuberculosis, the public control of—L. F. Flick, Philadelphia, 25.

Typhoid fever, complications in some cases of—Frank Hinckey, St. Louis, 86.

Typhoid fever, two contrasted cases of—George Homan, St. Louis, 254.

Vaccination, the protective proteins in—A. S. Bleyer, St. Louis, 265.

X-rays as a therapeutic agent—A. V. L. Brokaw, St. Louis, 321.

Leading Articles.

Acetonemia, incessant vomiting with, 369
 Achondroplasia, 43.
 Antibodies, food and, 439.
 Asthma, etiology of bronchial, 269.
 Atrophy, lactation, of the uterus, 473.
 Bacteriology of cystitis, 272.
 Bone, depression of the occipital, 191.
 Breech presentation, the diagnosis of fetal hydrocephalus in, 40.
 Bronchial asthma, etiology of, 269.
 Convulsions in infancy, the significance of, 188.
 Cystitis, bacteriology of, 272.
 Diabetes mellitus, treatment of, 437.
 Diphtheria, epistaxis following nasal, 436.
 Epistaxis following nasal diphtheria, 436.
 Fever, relapses in typhoid, 371.
 Food value of skim-milk, 114.
 Food and antibodies, 439.
 Hydrocephalus in breech presentation, the diagnosis of fetal, 40.
 Hysterical pain in the mastoid process, 109.
 Lactation atrophy of the uterus, 373.
 Mastoid process, hysterical pain in the, 109.
 Micro-organisms, the invisible, 37.
 Milk, food value of skim-, 114.
 Morbid processes like specific diseases, 192.
 Nervous phenomena in tetany, 113.
 Neurosthenic tonic treatment, 271.
 Occipital bone, depression of the, 191.
 Puerperium, the morbidity of the, 372.
 Stokes-Adams disease, 438.
 Tetany, nervous phenomena in, 112.
 Thymus gland, function of the, 42.
 Typhoid fever, relapses in, 371.
 Typhoid infection by inhalation, 111.
 Uterus, lactation atrophy of the, 373.
 Variability in man, causes of, 189.
 Vomiting, incessant, with acetonemia, 369
 Weil's disease, etiology of, 268.

Editorial Comment.

Abdominal pressure, what is intra-, 374.
 Ablation of the breast for hysterical nodules, 118.
 Antitoxin, fresh, 442.
 Appendix, a new use for the, 196.

Beaumont, William, 377.
 Blind, teaching the, to see, 194.
 Chauvinism in medicine, 374.
 Digestants, pineapples as, 195.
 Diphtheria, chronic, 442.
 Examiners, voluntary national board of, 46.
 Fumigations, faulty, 273.
 Gastrosia fungosa, 275.
 Glands, the sugar-controlling function of the suprarenal, 443.
 Hospitals and universities, report of the French commission on American, 118.
 Hysterical nodules, ablation of the breast for, 118.
 Life, prolongation of, in sea-urchin's eggs, 118.
 Medical exhibit at the world's fair, 276.
 Medical library, the St. Louis, 44, 377.
 Medical library, the value of to the physician, 45.
 Medicine, chauvinism in, 374.
 Micro-organisms, multiplicity of toxins produced by the same, 274.
 Neurasthenia, phototherapy in the treatment of, 195.
 Insufficientia pylori, 376.
 Intra-abdominal pressure, what is, 374.
 Original articles, sending to several journals, 443.
 Pathogenic streptococci, the identity of, 196.
 Pharynx tonsil, acute inflammation of the, 194.
 Phototherapy, 46.
 Phototherapy in the treatment of neurasthenia, 195.
 Pineapples as digestants, 195.
 Puerperal eclampsia, thyroid extract in, 47.
 Pylori, insufficientia, 376.
 Quackery, a new kind of, 375.
 Rheumatism, serum treatment of, 275.
 School life, harmful influence of, 274.
 Serum treatment of rheumatism, 275.
 Streptococci, the identity of pathogenic, 196.
 Substitution, the evils of, 116.
 Substitution; the practice of, 115.
 Substitution, the remedy for, 117.
 Substitutors, the attitude of the profession toward, 116.

Suprarenal glands, the sugar-controlling function of the, 443.

Thyroid extract in puerperal eclampsia, 47.

Tonsil, acute inflammation of the Pharynx, 194.

Toxins, multiplicity of, produced by the same micro-organisms, 274.

Tuberculosis, the control of, 47.

Waiting room, the physician's, 441.

Water supply, the St. Louis, 441.

World's fair, medical exhibit at the, 276.

Medical Research.

Absorption, intestinal, 201.

Adipositas, 122

Albumosuria, the significance of, 198.

Alkalinuria, 202.

Antitoxin, duration of immunity by diphtheria, 283.

Blood poison, medicinal, 446.

Blood pressure, 122.

Brain, physiology of the, 449.

Cerebral disintegration, the lacunæ of, 449.

Colloidal solutions of metals, 123.

Digestion of cane sugar, 201

Diphtheria antitoxin, duration of immunity by, 283.

Diplococcus perlicidus, 202.

Electrolysis of metallic salts in human tissues, 448.

Eosinophiles in pemphigus, 382.

Fatigue in nerves, 260.

Gastritis, experimental, 444.

Gelatin in hemorrhages, 197.

Glycosuria, 120.

Hemorrhages, gelatin in, 197.

Intestinal absorption, 201.

Lacunæ, the, of cerebral disintegration, 449.

Lipase, 119

Liver, functions of the, 382.

Metals, colloidal solutions of, 123.

Metals, two new proteid compounds of, 378.

Nerves, fatigue in, 200.

Neurosis, phthisis pulmonalis as a, 379.

Pancreas, secretions of the, 200.

Pemphigus, the eosinophiles in, 382.

Phthisis pulmonalis as a neurosis, 379.

Physiology of the brain, 449.

Poison, medicinal blood, 446.

Proteid compounds of metals, two new, 378.

Salts, electrolysis of metallic, in human tissues, 448.

Serum, can a specific, possess curative and protective properties, 276.

Stomach, the influence of different positions of the body on the motor functions of the, 378.

Sugar, digestion of cane, 201.

Trimethylamids, the, 200.

Urobilin, the renal origin of, 383.

Yeast, brewers', as a therapeutic agent, 447.

Diagnostics.

Abdomen, the telephonic properties of the inflamed, 384.

Acid-proof bacilli in sputum, 48.

Agglutination reaction of the bacillus tuberculosis, the, 50.

Aneurysm, a new sign of thoracic, 49.

Apneic-pause, significance of the, 207.

Appendicitis, palpation in, 450.

Bacilli in Sputum, acid-proof, 48.

Bacillus tuberculosis, the agglutination reaction of the, 50.

Blood-count in mumps, 124.

Blood examination in pertussis, 49.

Bloody stools, 386.

Bursa, the iliopsoas, 385.

Calculus, diagnosis of renal, 451.

Carcinoma of the endometrium, incipient, 202.

Cardiopathy, the relation of irregular pulse to, 207.

Chest of children, signs of fluid in the, 386.

Chest, shape of the tuberculous, 124.

Chills in typhoid fever, 386.

Cough, another cause of, 203.

Cord, short umbilical, 126.

Cytology, cryoscopy and hematolysis in certain surgical exudations of serum, the clinical value of, 50.

Endometrium, incipient carcinoma of the 202.

Erythema scarlatiniform, 203.

Esophagoscope, diagnostic importance of excising tissue pieces through the, 49.

Exudative pleuritis, an early sign of, 203.

Febrile diseases, difficulties in the diagnosis of certain, 125.

- Fever, chills in typhoid, 386.
 Fluid in the chest of children, signs of, 386.
 Functional murmurs, characteristics of, 451.
Gastric tumors, topical diagnosis of, 386.
 Growth, malignant, 454.
Hematolysis, the clinical value of cytology, cryoscopy and, in certain surgical exudations of serum, 50.
Hemiplegia, new signs of organic, 384.
Hyperchlorhydria, 125.
Hypochloruria in acute chronic diseases, 453.
Iliopsoas bursa, 385.
Iliopsoas muscle, contraction of the, 287.
Iodin reaction in the leucocytes, 386.
Kernig's sign, 451.
Kernig's sign, unilateral occurrence of 124.
Leucocytes, the iodin reaction in the, 387.
Limp, the remittent, 284.
Liver, pseudocirrhosis of the, 204.
Lumbar puncture for the positive diagnosis of tuberculous meningitis, 285.
Lungs, how to recognize tuberculous changes in the apices of the, 385.
Malarial infection, acute abdominal symptoms depending on, 205.
Malaria, periodicity of, 125.
Malignant growths, 454.
Meningitis, lumbar puncture for the positive diagnosis of tuberculous, 285.
Mumps, blood-count in, 124.
Murmurs, characteristics of functional, 451.
Ovarian tumors, 204.
Palpation in appendicitis, 450.
Paresis, early diagnosis of, 288.
Peritonitis, simulation of acute, by pleuro-pneumonic disease, 286.
Peritonitis, tuberculous, in children, 204.
Pharyngeal reflex, loss of, 385.
Pleuritis, an early sign of exudative, 203.
Pleuro-pneumonic disease, simulation of acute peritonitis by, 286.
Polyhydrannios, 285.
Pulmonic sound, splitting of the second, 453.
Pulsations and pulsating swellings, 451.
Pulse, the relation of irregular, to cardiology, 207.
Pertussis, blood examination in, 49.
Pseudocirrhosis of the liver, 204.
Rectum, diseases of the sigmoid flexure and, 286.
Renal calculus, diagnosis of, 451.
Respiratory sound, the origin of the vesicular, 205.
Sigmoid flexure and rectum, diseases of the, 286.
Sign, Kernig's, 451.
Sound, second pulmonic, splitting of the, 453.
Sputum, acid-proof bacilli in, 48.
Sugar, Elliott test for, 206.
Syphilis, a sign of hereditary, 204.
Telephonic properties of the inflamed abdomen, 384.
Thoracic aneurysm, a new sign in, 49.
Tissue pieces, diagnostic importance of excising, through the esophagoscope, 49.
Topical diagnosis of gastric tumors, 386.
Tuberculosis, the agglutination reaction of the bacillus 50.
Tuberculous changes in the apices of the lungs, how to recognize, 385.
Tuberculous chest, shape of the, 124.
Tuberculous meningitis, lumbar puncture for the positive diagnosis of, 285.
Tuberculous peritonitis in children, 204.
Tumors, ovarian, 204.
Tumors, topical diagnosis of gastric, 386.
Typhoid fever, chills in, 386.
Typhoid spine, 205.
Umbilical cord, short, 126.
Uremia, diagnosis of, 451.
Urinary analysis, new way of applying nitric acid and other reagents in, 48.
Vesicular respiratory sound, the origin of the, 205.

Therapeutics.

- Acetozone (benzyl-acetyl hyperoxid) in the treatment of typhoid fever, 51.
Adrenalin, 210.
Adrenalin chlorid in typhoid fever, 389.
Alcoholism treatment by hyoscine hydrobromate, 290.
Apomorphin in puerperal convulsions, 290.
Argyrol in the treatment of acute gonorrhœa, 456.
Autoinfection, or cyclic vomiting, treatment of, 210.
Baths, hot, in pneumonia, 294.
Baths, mineral, 294.
Brewers' yeast in therapeutics, 454.

Cardiac complications of grip, treatment of, 126.
 Chemical rays, treatment of erysipelas by exclusion of, 128
 Cocain ointment for herpes zoster, 388.
 Cold, use of, in the treatment of skin diseases, 208.
 Convulsions, puerperal, apomorphin in, 290.
 Cutaneous administration of salicylic acid, 390.
 Cyclic vomiting or autoinfection, treatment of, 210.
 Dysmenorrhea, nasal treatment for, 390.
 Earache, remedy for, 389.
 Erysipelas, treatment of, by exclusion of chemical rays, 128.
 Fever, typhoid, acetozone (benzyl-acetyl hyperoxid) in the treatment of, 51.
 Fever, typhoid, adrenalin chlorid in, 389.
 Glycerophosphates—particularly the glycerophosphate of sodium, 455.
 Gonorrhœa, argyrol in the treatment of acute, 456.
 Grip, treatment of cardiac complications of, 126.
 Headache, orthoform in syphilitic, 128.
 Heart stimulants, 289.
 Herpes zoster, cocaine ointment for, 388.
 Histogenol, 52.
 Hot flushes of the menopause, 53.
 Hyoscine hydrobromate, alcoholism treated by, 290.
 Ichthyol in rheumatism, 389.
 Lithiasis, treatment of intestinal, 293.
 Liver, sodium glycocholate in diseases of of, 291.
 Massage of ulcers, 207.
 Menopause, hot flushes of the, 53.
 Migraine, 389.
 Nephritis, treatment of chronic, 291.
 Nucleoids of iron, copper mercury and silver, 387.
 Orthoform in syphilitic headache, 128.
 Pneumonia, hot baths in, 294.
 Practical therapeutics, contribution to, 51.
 Prescriptions :—
 Arthritis, rheumatoid, 391.
 Asthama, 211, 391.
 Bronchitis, 392.
 Bronchorrhea, 392.
 Carminative mixture, 291.

Prescriptions :—
 Dentition, 53.
 Diarrhea, nervous and fermentative dyspepsia, 211.
 Dyspepsia, fermentative and nervous diarrhea, 211.
 Erysipelas, 54.
 Glycosuria, gouty, 211.
 Gout, 211.
 Heart disease, 211.
 Intestinal antiseptic, 211.
 Lumbago, 54.
 Nephritis, 211.
 Pleuritic pains, 54.
 Rheumatism, chronic, 211.
 Rheumatism, muscular, gout and auto-intoxication, 211.
 Rheumatism of joints, 54.
 Rheumatoid arthritis, 391.
 Thrush, 53.
 Puerperal convulsions, apomorphin in, 290.
 Rest, effect of, upon the progress of septic infections, 292.
 Rheumatism, ichtyol in, 389.
 Rheumatism, treatment of, 126.
 Salicylic acid administered cutaneously, 390.
 Saline solution, normal, 209.
 Scales, to remove, from the colon, 388.
 Sciatica, nature and treatment of, 208.
 Septic infections, effect of rest upon the progress of, 292.
 Skin diseases, treatment of by the use of cold, 208.
 Syphilitic headache, orthoform in, 128.
 Therapeutics, contribution to practical, 51.
 Tuberculosis, home treatment of, 212.
 Typhoid fever, acetozone (benzyl-acetyl hyperoxid) in the treatment of, 51.
 Typhoid fever, adrenalin chlorid in, 389.
 Ulcers, massage of, 207.
 Vomiting, cyclic, or autoinfection, treatment of, 210.
 Worms, treatment of, 52.
 Yeast, brewers', in therapeutics, 454.

Society Proceedings.

MEDICAL SOCIETY OF CITY HOSPITAL ALUMNI.
 Anatomical specimens, 133.
 Aneurysm of the transverse aorta, 213.

Apparatus for the injection of normal salt solution, 296.
 Epilepsy, 129.
 Epithelioma treated by x-rays, 397.
 Gynecologic diseases without local symptoms, 393.
 Inguinal hernia, 215.
 Pregnancy, tubal, 295.
 Prostatic hypertrophy, 457.
 Tumor of the abdomen, 301.
 Typhoid fever, 298.
 Typhoid fever, complications in, 130.
 Vessel phenomena in aortic regurgitation and thoracic aneurysm, 302.
 Wounds, observations on gunshot, 55.

ALUMNI ASSOCIATION OF THE MEDICAL DEPARTMENT WASHINGTON UNIVERSITY.

X-rays as a therapeutic agent, 465.

BETHESDA PEDIATRIC SOCIETY.

Antipyresis in children, 472.
 Bacillus dysenteriae, 471.
 Gastroenteric infection in infants, the etiology of, 471.

Reports on Progress.

Ablatio placentae, 138.
 Acroparesthesia, 221.
 Albuminuria in pregnancy, 138.
 Angioma as a symptom of cancer, 63.
 Antistreptococcal serum treatment of surgical erysipelas without benefit, 229.
 Anuria, 217.
 Appendix, why should we not treat the gall-bladder as we do the, 219.
 Arterio-sclerosis, inorganic serum in, 74.
 Ataxia, locomotor, 143.
 Bacilli, Eberth, in the sputum of typhoid patients, 151.
 Bacilli, typhoid, in the urine long after convalescence, 137.
 Bifocal lenses, 145.
 Bladder, gall-, clinical observations on the surgery of the, 154.
 Bone, fracture of the base of the fifth metatarsal, by indirect violence, 156.
 Breast-milk, a new reaction for, 151.
 Bronchus, fistula formation between the gall-ducts and a, 218.
 Bronchus, removal of foreign bodies from the, 72.

Burns and their treatment, 310.
 Cancer, angioma as a symptom of, 63.
 Cancer committee, second annual report of, 69.
 Cancer of the uterus, present status of operations for, 226.
 Carcinoma of the stomach, cause of deficiency of hydrochloric acid in, 217.
 Carcinoma, report of investigations in, 307.
 Cardiac paralysis by chloroform, 156.
 Cataract operations in the aged, 144.
 Chloroform, cardiac parasympathy by, 156.
 Chronic segmentary edema, 232.
 Compression therapy, 225.
 Cosmetic and visual results of squint, 229.
 Cytoplasm, the analogies between Plimmeier's bodies and certain structures found normally in the, 69.
 Diabetes mellitus in a child four years old, 153.
 Diabetics, occurrence of sugar in the stools of, 138.
 Diarrheas in children, etiology and prophylaxis of, 152.
 Diarrhea, treatment of summer, 152.
 Dyspepsia and epilepsy, close relationship existing between, 142.
 Eclampsia, 140.
 Edema, chronic segmentary, 232.
 Empyema, chronic, of the antrum Highmori, 148.
 Endocarditis, ulcerative, 75.
 Epilepsy and dyspepsia, close relationship existing between, 142.
 Erysipelas, antistreptococcal serum treatment of surgical, without benefit 229.
 Erythematous rashes simulating the acute exanthemata, 312.
 Exophthalmic goiter, 154.
 Experimental medicine, 233.
 Fever, acute syphilitic, 218.
 Fever, hay, 306.
 Fever, yellow, fomitories, experiments with, 68.
 Fibroma of the vulva, 223.
 Fistula formation between the gall-ducts and a bronchus, 218.
 Fluoroscope, determination of phthisis pulmonalis by means of the, 76.
 Foreign bodies, removal of, from the bronchus, 72.
 Fracture, a rare, 156.

- Gall-bladder, clinical observations on the the surgery of the, 154.
 Gall-bladder, why should we not treat the, as we do the appendix, 219.
 Gangrene, emphysematous, and its etiology, 149.
 Gangrene, primary, in the eyelids, 144.
 Gastric ulcer, 218.
 Glaucoma, iridectomy in, 231.
 Glycosuria of muscular origin, 136.
 Goiter, exophthalmic, 154.
 Growth, retardation of, 76.
 Hay fever, 306.
 Head injuries, 308.
 Heart murmurs in the first year of life, accidental, 308.
 Herpes zoster, 62.
 Hour-glass stomach, 217.
 Hydrocephalus, 228.
 Hydrocele, carbolic acid in the treatment of, 156.
 Hydrophobia in man, contribution to the knowledge of, 150.
 Hyperpyrexia, 234.
 Infantile ophthalmia, 231.
 Injuries, head, 308.
 Intestinal obstruction, recurrent pseudo-, 232.
 Intussusception, 227.
 Iridectomy in glaucoma, 231.
 Lenses, bifocal, 145.
 Locomotor ataxia, 143.
 Medicine, experimental, 233.
 Meningitis, the positive diagnosis of, particularly tube culous, by means of lumbar puncture, 310.
 Mental faculties, localization of the, 64.
 Milk, a new reaction for breast, 151.
 Multiple neuritis, causation of, 67.
 Murmurs, accidental heart, in the first year of life, 308.
 Nasal deformities, subcutaneous injections of paraffin in the correction of, 71.
 Nephritis, experimental alimentation with chlorids in, 136.
 Nerve injuries, phrenic, 64.
 Nervous disorders, relation of local diseases to, 142.
 Neurasthenia, 140.
 Neuritis, causation of multiple, 67.
 Neuritis, optic, caused by thyreoidin, 233.
 Obstruction, recurrent pseudo-intestinal, 232.
 Ophthalmia, infantile, 231.
 Optic neuritis caused by thyreoidin, 233.
 Otitis media, infectious, 147.
 Ovarian pregnancy, 223.
 Palate, perforative tubercular ulceration of the soft, 146.
 Paraffin, subcutaneous injection of, in the correction of nasal deformities, 71.
 Paralysis, spastic spinal, 222.
 Peritonitis, inoperable septic, 65.
 Phrenic nerve injuries, 64.
 Phthisis pulmonalis, determination of, by means of the fluoroscope, 76.
 Plummer's bodies, the analogies between, and certain structures found normally in the cytoplasm, 69.
 Pneumonia in young children, 312.
 Pregnancy, albuminuria in, 138.
 Pregnancy, ovarian, 223.
 Pregnancy, vomiting of, artificial serum in incoercible, 139.
 Psychic treatment, 66.
 Puerperal eclampsia, thyroid therapy in, 139.
 Puerperium, exercise in the, 223.
 Retardation of growth, 76.
 Retina, idiopathic detachment of, 145.
 Retrodisplacement of the uterus, 224.
 Segmentary edema, chronic, 232.
 Septic peritonitis, inoperable, 65.
 Spinal paralysis, spastic, 222.
 Squit, the cosmetic and visual results of 229.
 Strangulation of small intestine, cause of death in, 220.
 Sugar, occurrence of, in the stools of diabetics, 138.
 Summer diarrhea, treatment of, 152.
 Suprarenal extract, employment of by the oculist, 144.
 Syphilitic fever, acute, 218.
 Tenth rib, diagnostic import of the floating, 137.
 Therapy, compression, 225.
 Thyreoidin, optic neuritis caused by, 233.
 Thyroid therapy in puerperal eclampsia, 139.
 Tubercular ulceration of the soft palate, perforative, 146.
 Tuberculosis, the genesis of pulmonary, 148.

- Tuberculous meningitis, positive diagnosis of, by means of lumbar puncture, 310.
 Typhoid bacilli in the urine long after convalescence, 137.
 Typhoid, diagnosis and treatment of, 306.
 Typhoid patients, Eberth bacilli in the sputum of, 151.
 Ulcerative endocarditis, 75.
 Ulcer, gastric, 218.
 Uncinariasis, 219.
 Uterus, cancer of the, present status of operations for, 226.
 Uterus, retrodisplacement of the, 224.
 Vomiting of pregnancy, artificial serum in incoercible, 139.
 Vulva, fibroma of the, 223.
 Widal reaction, the technic of, 149.
 Yellow fever fomites, experiments with, 68.

Book Reviews.

- A brief manual of prescription writing, 158.
 A brief of necropsy and its medico-legal relation, 289.
 Annual report of the board of health of Ohio, 318.
 A pocket text-book of *materia medica, therapeutics and prescription writing*, 400.
 A text-book of obstetrics, 236.
 A text-book of pathology and pathological anatomy, 476.
 A text-book on embryology, 316.
 Circulation of the female genitalia, 479.
 Compend of general pathology, 79.
 Compend of special pathology, 479.
 Diseases of infancy and childhood, 313.
 Diseases of the eye, 318.
 Diseases of the rectum and anus, 316.
 Diseases of the stomach, 315.
 International clinics, 78, 478.
 International text-book of surgery, 77, 476.
 Practical medicine series of year-books, 158, 235, 317, 477.

- Practical diagnosis, 314.
 Practical midwifery—a manual of obstetrics for students and physicians, 399.
 Quain's dictionary of medicine, 79.
 System of physiologic therapeutics, 158.
 Text-book of diseases of women, 238.
 Text-book of *materia medica and therapeutics*, 237.
 Text-book of physiological and pathological chemistry, 157.
 Text-book of practical therapeutics, 235.
 The diseases of infancy and childhood, 399.
 The neuroses of the genito-urinary system in the male, 237.
 The principles and practice of gynecology for students and practitioners, 398.
 The menopause, 400.
 Transactions of the medical association of the state of Alabama, 480.

Notes and Items.

- Acute pneumatosis gastro-intestinalis, 187.
 Anesthesia during sleep, 216.
 Bacillus of Du. rey, 267.
 Ballooning for anemics, 294.
 Bovine tuberculosis, transmissibility of, to man, 80.
 Census, twelfth, 239.
 Cholera in Manila, 61.
 Eclampsia experimental studies of, 392.
 Diarrhea in infants, etiology of, 392.
 Epileptic seizures, 240.
 Flint murmur, 240.
 Food preservatives, borax and boric acid as, 36.
 Human life, commercial value of, 239.
 Lecture by Prof. Osler, 294.
 Menstruation, precocious, 240.
 Spiders, poisonous, 92.
 Syphilitic headache, lumbar puncture for, 159.
 Tobacco, harmless, 61.
 Universal exposition in St. Louis, 1904, exhibit in medicine and surgery at the, 319.
 Virchow, death of Rudolph, 318.

CLINICAL NOTES.

Notes on Chalybeate Therapy.

The Therapeutic Value of Pepto-Mangan (Gude)

By J. W. FRIESER, M.D., VIENNA, AUSTRIA.

The medicinal use of iron dates back to a remote period, and since ancient times ferruginous medication has played an important part in the treatment of anemic conditions.

Since it has become known through clinical observation and investigation that iron introduced into the organism exerts a favorable influence upon pathological states of the blood, and that in anemia and chlorosis, as well as in other anemic conditions, it causes an increase of the number of red blood cells and of the percentage of hemoglobin, chalybeate medication has attained the importance of being almost a specific in this class of disorders.

The field of indications for the medicinal use of iron is quite extensive, for, aside from anemia and chlorosis, it is called for in all cases in which, through some pathological state or another, the integrity of the blood is affected and impaired in a greater or less degree. To this group belong, first, the large number of constitutional affections, especially scrofula and rachitis; second, tuberculosis in certain stages of its development; third, certain nervous disorders which are commonly attended with anemia, such as neurasthenia and hysteria; fourth, all conditions of weakness and exhaustion following severe acute febrile diseases or appearing during the period of convalescence from other serious diseases; and, finally, the anemias arising in the course of chronic wasting disease.

The chalybeates comprise a quite considerable number, all of which are intended to fulfill the therapeutic aim of supplying the lack of iron which is the source of bringing about an improvement of the pathological state of the blood, and of promoting blood formation in a normal manner. Although at the present time we are still imperfectly informed as to the primary causes of anemia and chlorosis, and do not as yet possess a clear insight into the inner workings of the pathological process, it must, nevertheless, be considered as demonstrated that the deficiency of iron in the body has its origin in certain functional anomalies of the blood-forming or blood-conserving organs,

and that it is the result either of pathological degeneration or of lessened production by them. Conformably to the causal indication, the aim of treatment in these diseases is, therefore, to replace the deficiency of iron, which plays so important a part in the human economy, as completely as possible, and this can only be brought about by the introduction of sufficient quantities of ferruginous medicaments in an absorbable form.

The number of ferruginous preparations at our disposal is much larger than in the case of any other medicaments, and almost daily we have an opportunity of acquainting ourselves with new remedies of this kind, so that, in view of the actual overflooding of the pharmaceutical market at the present time, it is not easy to find our way and to always make the proper choice. The preparation under consideration must be of such character that it is easily absorbed, and hence can be utilized by the organism.

We are led more and more to recognize the fact that inorganic iron, owing to its slight absorbability and assimilability, as well as its difficult digestibility and its irritating action upon the mucous membrane of the digestive tract, is not at all adapted for the rational treatment of the forms of disease considered here, and that only iron of organic character which approximates in its composition to the iron present in our foods presents those advantages in improving the quality of the blood which conform most closely to the demands of a logical and successful therapy. In this connection I must refer to the view of Bunge, which nowadays is shared by nearly all clinicians and pharmacologists, that iron introduced in the inorganic form is either not at all absorbed by the intact mucous membrane of the gastro-intestinal tract, or only in minimum and therefore in inadequate amounts, and hence can not be utilized for the formation of blood. Owing to this theory, which is forcing its way more and more to the front and is being accepted by many of the most vigorous adherents of the old iron therapy, the efforts of chemists have been more and more directed toward replacing the inorganic preparations of iron by easily assimilable and absorbable combinations, and from these have resulted iron albuminates and iron peptonates, which, on account of their superior properties, have steadily gained in popularity.

Such a preparation must be capable in a high degree of absorption and assimilation, must be digestible, easily borne, palatable, and must not in any manner exert disturbing by-effects upon the functions of the organism.

According to my extensive observations, these postulates are fulfilled in a satisfactory manner by Pepto-Mangan (Gude). I have had frequent opportunities, in a considerable number of cases (42) in which the preparation was employed with success, to acquaint myself with its therapeutic value and its beneficial medicinal properties.

In the administration of Pepto-Mangan to anemic and chlorotic patients I have been able to make the positive observation that under its use the constitution of the blood underwent a very satisfactory and sometimes remarkable improvement, often after a comparatively short period of treatment. The examination of the blood frequently showed a rapid increase of the number of red blood cells and of the percentage of hemoglobin, this being attended by a marked improvement of the general health and an increase of strength. Its advantageous chemical composition and its excellent medicinal properties such as easy assimilability, high absorption and assimilation power, and the absence of any deleterious or disturbing by-effect, illustrate particularly the advantages of this remedy, whose efficiency is evident in most cases.

Pepto-Mangan contains iron and manganese combined with peptone in the proper proportions and in a readily digestible and absorbable form, so that the preparation can be completely utilized by the organism. It has been most gratifying to me to observe that during the use of Pepto Mangan, which experience has taught me is particularly adapted in these maladies, it does not interfere with or exert any disturbing effect upon the digestion.

As a rule, during treatment with Pepto-Mangan the improvement in the constitution of the blood, as shown by physical examination, was accompanied by a beneficial effect upon the general condition and strength. The appearance and appetite of the patients improved visibly; the digestion and nutrition progressed favorably, and the patient felt better, happier, and more vigorous. Disturbances of the gastro-intestinal tract, such as pressure or pain over the stomach, nausea, a disagreeable feeling of fulness, a diminution of appetite, constipation, congestions, etc., which are so frequent during the administration of other iron preparations, especially those of inorganic character, were scarcely ever observed during the use of Pepto Mangan (Gude). On the contrary, in those cases in which there is a tendency to constipation and a marked atony of the gastric functions my experience has led me to regard this remedy as especially useful and effective.

It seems to me particularly noteworthy that often, even after a brief use of Pepto-Mangan, the anemic appearances, especially the often marked apathy, lassitude, and drowsiness, the palpitations of the heart, and headache, disappeared in a very satisfactory manner, and that even in those patients who suffered from insomnia frequently a good refreshing sleep occurred.

I would regard Pepto-Mangan (Gude) as an excellent and effective remedy, which is entitled to a prominent place among the iron preparations at present at our disposal.

It is my custom to direct that Pepto-Mangan be taken in these

cases to the exclusion of other treatment, and only in combination with appropriate dietetic measures, for periods of several weeks, and if necessary longer, three to four months. For adults I prescribe three tablespoonfuls to three to four dessertspoonfuls daily, for children three teaspoonfuls daily, in water or some white wine. During the entire time of administration I prohibit the use of raw fruit, acid or highly spiced dishes, and order a vigorous and regulated diet.

Diabetes Mellitus, Its Treatment and Cure.

An interesting brochure has recently been published by Chas. Roome Parme Co., of New York. It contains the recent monographs on the treatment of diabetes mellitus. This affection is usually considered incurable, but a perusal of this literature will show that the disease is by no means so formidable, that it is often cured, and that all cases can be benefitted so that all serious symptoms disappear.

Of special value are the careful observation of Archibald Dixon (*Medical News*) who found a wonderful improvement under the administration of Arsenauro. The general condition improved and the sugar in the urine rapidly diminished.

Another very positive series of investigations was made by Williams (*Dietetic and Hygienic Gazette*), still another by Holmes (*Medical World*), still another by Barney (*N. Y. Med. Journal*), all these prove that by far the most potent treatment in diabetes is the administration of Arsenauro and Mercauro.

There can be no doubt that Arsenauro cures diabetes, although its action, in a great measure, is based on empirical grounds, its continued clinical successes warrant its general use in preference to codien and other medicinal agents.

Cystitis.—A treatise on the treatment of cystitis by Dr. Henry Graham MacAdam, Instructor in Venereal and Genito-Urinary Surgery, New York Post-Graduate Medical School, contains several references to Urotropin. The author also remarks :

Micajah Wafers.—Prof. Hobart A. Hare in his recent Text-book on Therapeutics says, If a census could be taken of those who die from the use of impure or weak drugs the figures would be appalling. This statement clearly emphasizes the advisability of using remedies manufactured by reliable firms and not substitutes. For eighteen years Micajah's Medicated Uterine Wafers have stood the test as a satisfactory treatment in diseases of women, such as Leucor rheia, Endometritis, Vaginitis, Gonorrhea, etc., and if your patient does not experience the usual good resultt from a supposed Micajah

Wafer she is in all probability using a substitute and not the genuine article.

Pepto-Cardanette.—E. M Candler of Chicago, Ill., writes :—I am finding Pepto-Cardanette the one agent to relieve the malassimilation of food in a marasmus child, a relative of my wife. I consider the showing Pepto-Cardanette has made in the case most remarkable.

Dysmenorrhea.—I obtained surprisingly quick and very satisfactory results from the combination of Diovinburnia and Neurosine in Dysmenorrhea with nervous accompaniments.

W. L. Ransom, M.D., Granger, Iowa.

I always derive immediate results from the use of Diovinburnia and Neurosine wherever indicated, especially in Dysmenorrhea.

A. D. Ferguson, M.D., Frost, Texas.

Diovinburnia and Neurosine in combination, equal parts, is the remedy par excellence in Dysmenorrhea and Female Neuroses.

A. W. Hunt, M.D., Flowery Branch, Ga.

Pruritic Affections.—Any remedy which would serve to diminish or cure the severe itching attendant upon many pruritic affections would be hailed by the dermatologist with great satisfaction. It seems that in Epicarin, a beta-naphthol derivative, we have a drug which has proven of great value in selected cases. Thus far the best results have been attained in scabies and prurigo; eczema and psoriasis have not responded to its use.—Editorial, *American Therapist*, January, 1902.

Borobenphene as a Disinfectant.—Your sample at hand; have used some of it. I find it the best disinfectant I have used for some time. Will keep it on hand from now on.

J. T. Inman, M.D., Baring, Mo.

Bete Noire of the Physician's Life.—Cases of Eczema often prove, for the time being, the bete noire of the physician's life. The erythema, the papules, vesicles or pustules, singular or in combination of all three lesions in their various forms or degrees, with more or less infiltration and intolerable itching, followed by desquamation, discharge or formation of crusts, coming in crops and with a persistence that seems unyielding, leads us to welcome an agent so admirable as Germiletum, which relieves the itching and irritation almost instantly, and with proper internal treatment the majority of cases of this almost inveterate disease, will be entirely eradicated.—M. Yarnall, M.D., St. Louis, Mo.

Backache.—Robert C. Kenner, A.M., M.D., Ex-President Louisville Clinical Association, says: I have found no remedy to so rapidly relieve pain of a sprained back and to bring about resolution as a Bell-cap-sic Plaster applied over the area of pain: They relieve the pain and set up resolution in the inflamed muscles, by absorbing the inflammatory deposit. When one of these plasters does not cover the area I apply two or even more.

They do not cause pain or burning, but on the other hand produce an agreeable soothing sensation.

I commonly rely upon these plasters in all cases of sprained back, and only exhibit internal medicine when there is some coexisting disease that makes that necessary.

In any case of backache which presents itself, it is necessary to arrive at the causative factors. If the backache is due to exposure to cold or is attributable to sprain of the back no internal remedy is to be given, but the treatment given above for sprain back is to be applied.

If the backache is neuralgia, we shall seek the cause and exhibit such remedies as best promise to neutralize the cause. In these cases however, the anodyne and absorptive virtues of Bell-cap sic Plasters will tend to bring about a more speedy cure, and at the same time relieve the suffering, which often is so intense as to render the patient almost an invalid.

In a word the causes which awaken into existence the backache in our patient must receive logical treatment. In all case, however, we shall find that success will be attained with greater ease and with greater comfort to our patient if we will employ correct local treatment, and the Bell-cap-sic plaster has been found unrivaled for its local anodyne and absorptive power.

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For Your Desk.—For several years a handsome rocker-pad has been mailed to physicians by Henry B. Platt of New York. Finding that many prefer a flat desk blotter, the concern had one designed specially for them, and are now ready to mail them on request.

A postal card addressed to the office of Platt's Chlorides, 42 Cliff street, New York will bring you one.

CLINICAL NOTES.

Substitutors Steal Physicians' Patients.—Incidentally, the Antikamnia Chemical Company is after "Counterfeiter" and "Substitutors" with a sharp stick. Their work in New York City is, no doubt, well known to our readers, and they have now broken up a counterfeiting gang in New Orleans.

There can not be two views on the subject of substitution. It is swindling, pure and simple. Antikamnia and Antikamnia Tablets are made only by The Antikamnia Chemical Company, of St. Louis, Mo., and when a physician prescribes either Antikamnia Powdered or Tablets he means the products of that firm. If his patient does not get them, a fraud is perpetrated, not only upon The Antikamnia Chemical Company, but upon the physician and his sick patient for whom the medicine was intended.

In other words, the doctor's patient is taken out of the doctor's hands, transferred absolutely to the Substitutor's care and then given whatever remedy the substitutor thinks best. All this, irrespective of the doctor's diagnosis. In short, the treatment is in accordance with the "diagnosis" made by the substitutor. And as all substitutors are thoroughly saturated with avarice, greed and utter disregard of the most sacred rights of others, the fate of their victims can well be imagined. It is the purpose of The Antikamnia Chemical Company to expose and punish this crime wherever they locate it, and they have notified the trade that the least punishment "Substitutors" of this kind can expect, is exposure of their guilt.

Blood for Babies.—In the course of the second year there comes a time when the milk diet begins to be insufficient for the growing child, and Nature calls for a change, while yet the system is in many cases unprepared for solid food. This kind of deadlock results in diarrhea or constipation, anemia, restlessness, fretfulness, etc. In such cases the fit and radical remedy will be found in the administration of, say 10 drops of bovinine in a little milk, at intervals of three hours.

Little R. V., a patient who came under my care in the condition of malnutrition above described (after trying all the usual medical helps with no benefit), was immediately restored by the direct blood treatment. On the second day of taking bovinine, the constipation and other trouble began to be relieved, and on the third day all signs of ill health had disappeared as if by magic. This simple treatment

was continued for three weeks, the child thriving beautifully.—Case reported by Dr. T. J. Biggs.

Pruritus Vulvæ may be due to a variety of causes, both of local and constitutional origin. Probably the most common is a vaginitis or vulvitis, giving rise to irritation of the nerve filaments, which are laid bare by the desquamation of the epithelium over the inflamed area. In this form of pruritis the immediate indication in treatment is to reduce the discharge, which is the primary cause of the distressing itching, and to render it as unirritating as possible by preventing its decomposition. This can be readily done by the use of Micajah Medicated Uterine Wafer, which is at the same time astringent, antiseptic and alterative. At the beginning it will be best to dissolve a wafer in about a pint of water and use it as an injection. Later, as the irritation subsides, the wafer may be inserted every third day. It is always advisable to precede its use by a copious douch of hot water.

Eczema.—I have used Germiletum on a very stubborn case of eczema (hands and face) and am glad to say, with perfect satisfaction, a decided improvement was manifest in twenty-four hours. I have since prescribed it in a case of eczema capitis in a girl, aged 12 years, with the same happy result..

C. C. Gentry, M.D.,
Webb City, Mo.

The Dios Chemical Company, St. Louis, Mo., will furnish a full-size (14-oz.) bottle of Germiletum, free, to physicians who have not already received same, they paying express charges.

Ideal Tonic.—Fellows' syrup of hypophosphites is an ideal tonic and offers special advantages in anemia, bronchitis, phthisis, influenza, neurasthenia and, during convalescence, after exhausting diseases. For literature of value, address Mr. Fellows, 26 Christopher Street, New York.

Stomatitis.—I have used Abbott's Saline Laxative and find it very beneficial in sick headache, dyspepsia and other stomach and bowel troubles. I am now using it in a case of stomatitis, and it is working well.

J. P. Compton, M.D.,
Flag, Mo.

Gonorrhea.—Henry Heil Chemical Co., St. Louis: In reply to your letter I will say that Borobenphene-Heil has done very good work in a case of gonorrhea. I shall use it again when I have an opportunity, as I consider it a fine antiseptic. Isaac Friedman, M.D., Chicago, Ill.

CLINICAL NOTES.

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Rhinitis.—I have used Germiletum in many cases of rhinitis with excellent results. It is also the most efficient remedy in catarrhal affections.

E. W. Watkins, M.D., Washington, D. C.

Otitis Media.—Henry Heil Chemical Co., St. Louis : I am very highly pleased with both your preparations, in fact, I have never found anything as good as Glycobenphene-Heil; in suppurative otitis media or externa its effects are almost magical. The Borobenphene-Heil I have not had occasion to try thoroughly, but for what I have tried it, I have found it excellent.

J. M. Brown, M.D., Aurora, Mo.

The Question?—After many satisfactory trials of a remedy have you ever experienced a time when all the indications were the same, yet the article prescribed did not seem to give results ?

You invariably presumed that the old standby had lost its efficacy when in all probability you were not using the genuine product but a substitute.

In diseases of women—such as leucorrhea, endometritis, gonorrhœa, vaginitis, etc., where so much depends upon actual results it is imperative that the genuine Micajah's Medicated Uterine Wafers are not a substitute.

Only successful preparations are imitated, hence the large number of substitutes of the genuine Macajah on the market.

Nuclein Therapy in Typhoid.—Protonuclein is indicated according to Latta in typhoid because it increases leucocytosis and thus adds to the resisting power of the cell structures in overcoming disease. As soon as he suspects typhoid, without waiting to insure the diagnosis, he commences to give Protonuclein, usually giving large doses in the beginning, lessening the quantity until the system has responded to the treatment, the patient taking no other food nor medicince for two hours. At the end of the first half hour of this period, four to six ounces or more of hot water are given and thirty minutes

later the dose of Protonuclein and then an hour allowed for absorption. In this way every three hour period is divided into two parts, the first two hours devoted to Protonuclein and hot water and the last one to feeding and whatever other treatment may be indicated. Frequently, during the first twenty four hours no benefit may be produced. The temperature and disturbing symptoms may increase; after that both will decline. The treatment is not an abortive treatment; still it is not unusual to have a patient better on the eighth or tenth day than would be the case with the old method at the end of the third week.—*Jour. Am. Med. Ass'n.*

An Ideal Summer Resort.—Yellowstone Park is the ideal summer resort of the United States. It combines everything found elsewhere, except the ocean, and a vast deal found nowhere else, not even at the seaside.

As a substitute for the ocean and its beaches and breezes, Yellowstone Lake, 7,700 feet above the ocean, 20 miles long and 16 miles wide, mountain-walled and pure and clear as crystal, proves extremely satisfactory.

The Geysers, Hot Springs and Grand Canyon form the most unique set of attractions found at any summer resort on earth, while the wonderful terraces at Mammoth Hot Springs stand alone in the world for their exquisite beauty of color and refinement of ornamentation.

Vats of boiling clay, lakes of mud, a cliff of natural glass, a mountain of sulphur, a natural bridge, are additional features not found elsewhere.

Mountains and mountain air lend their attractions, wild animals roam free and harmless over the wide domain, trout are plentiful in the streams and lakes, cascades and waterfalls are found everywhere, and hotels, large, electric lighted, steam heated, attractively placed, are scattered throughout the Park for the accommodation of Wonderland travelers.

For a spot remote from the noise, bustle, heat, dirt and sultriness of cities, and where Nature is not only seen in new and unconventional attire, but coolness, comfort, pleasure and recreation are all combined, in this sanctuary among the mountains for both man and beast, is the one among all on earth to be sought during the hot months.

The right way to reach this Wonderland of pure delight and unique sights is via the Northern Pacific and Livingston to Mammoth Hot Springs, the capital of the Park. Pullman cars run to the Park boundary.

Apply to any Agent of Northern Pacific for information, and send 6 cents to Charles S. Fee, General Passenger Agent, St. Paul, Minn., for "Wonderland 1902."

CLINICAL NOTES.

"In Medicina Qualitas Prima Est."—All the preparations of Mm. R. Warner & Co. are known for excellence of quality, accuracy and uniformity of composition. The effervescent lithia water tablets furnished by this firm offer us a ready and effective method of introducing lithia into the system for the relief of the many disorders in which that remedy is of conspicuous service. The tablets are made in two strength—one containing 3 and the other 5 grains.

Lithia water tablets promote the activity of the kidneys, increases the elimination of urea and converts uric acid into a soluble form. These properties are an indication of their value in practical medicine. Their chief applicability is in gout and lithemic conditions. By their instrumentality in conveying deleterious products harmlessly from the system they prevent its accumulation and, consequently, the damage which its constant presence inflicts. The pernicious influence of the products of imperfect metabolism upon the kidneys, heart and blood-vessels is averted or minimized. The aggregation of insoluble and gritty particles in the form of gravel or stone is prevented by the continued use of these tablets. They will, therefore, often be efficient in saving the kidneys from disorganization and the patient from the agonies produced by the passage of a calculus. By an analogous action they obviate the formation of stone in the bladder and alleviate inflammation of that organ. These tablets are, moreover, of much service in rheumatic conditions, both articular and muscular. In the subjects of gout and rheumatism they improve digestive power and, therefore, tend to remove some of the causes of the various forms of mischief which those conditions are capable of producing throughout the body.

Warner's effervescent lithia water tablets are likewise useful in Bright's disease, acting as a diuretic and reducing albuminuria. In this manner they prevent the accumulation of toxic products. It must be recognized, from such considerations, briefly presented, they present a wide sphere of usefulness.—*Cyclopedia of Practical Medicine*.

Its Distinctive Feature.—One need but to review the physiologic activities of the remedies recommended as tonics and reconstructives to realize the fact that practically all of them have some secondary effect which detract from their clinical value. It may be that they irritate the stomach and thereby excite repulsion on the part of the patient or even induce nausea and vomiting; some of them are astringent, others primarily stimulating but secondarily depressing—and so on through the entire category of remedies, objections more or less serious may be found. It is, therefore, a matter of great importance

to employ a remedy which is not only free from deleterious by-effects and after effects, but which adapts itself to use as a routine remedy in many and diverse conditions that call for tonic and reconstructive medication.

The one remedy which many years of experience proves is entirely free from detrimental effects, is Gray's Glycerine Tonic. This preparation is of pleasant taste, agrees perfectly with rebellious and sensitive stomachs, patients never tire of its continued administration, and it is extremely effective in restoring tone and vigor to the entire system.

The entire freedom of Gray's Tonic from anything like drug effects, is one of the strongest reasons why the best element of the profession have adopted the remedy for routine administration in all conditions associated with impairment of general health, lack of nervous energy, general exhaustion—in amenia, malnutrition, neurasthenia and in chronic wasting diseases.

Health-Building Tonic.—Where there is impaired digestion, alimentary derangement, defective nutrition and an anemic condition of the system from any cause whatever, I have found Trophonine as a delicate, non irritating nutritive, reconstructive, health building tonic, the remedy par excellence.

S. S. Nivison, M.D.,

Dryden, N. Y.

Fermentative Dyspepsia.—I have used Germiletum with great success in fermentative dyspepsia, which has heretofore resisted all my efforts to cure. I was surprised and delighted with the result. Improvement was apparent from the second day of treatment. I began by giving Germiletum, about 1 to 10 of ice water, one teaspoonful every two hours; increasing 1 to 7 on the third day, and made still stronger on the fifth day by giving a solution 1 to 5.

Leroy R. Stoddard, M.D., Washington, D.C.

Eczema.—Samples of Glycobenphene and Borobenphene to hand some time ago, and I should have answered before now, have been using the Glycobenphene in a case of eczema of the entire body with the best results. My druggists will order a supply, I do not wish to be without it. The Borobenphene I am now using and will report results. Yours truly, F. D. Lewis, M.D., Hot Springs, Ark.

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CLINICAL NOTES.

How to Assist Young Girls to Womanhood.

By EDWARD C. HILL, M.D., Denver, Col.

The primary establishment and the menopausal cessation of menstruation are the two crucial physical epochs of woman's life. The change from maidenhood to womanhood is one that involves the whole body. In an ideal state of perfect health the transition into puberty should be as natural and uneventful as gliding from sleep into consciousness. Owing, however, to the present civilized modes of living, the cerebral development of young girls is fostered and forced to a degree that deprives the remaining tissues and organs of their necessary nutrition, and too often we are called upon to treat delicate girls that are like buds blasted in the blossoming. * * *

According to Emmet, more than half of all women who have suffered at puberty from menstrual derangements are sterile and delicate in after life. Skene has stated that his observations showed that the vast majority of incurable diseases peculiar to women originate in imperfect development and consequent derangement of function. This development is either primary, during the embryonic stage, or secondary, at puberty. Defects in the former are irremediable, whereas secondary deviations from the normal standard are both preventable and curable in most instances.

It is important in connection with the subject under consideration to bear in mind the essential reciprocal relations of the reproductive system and the general organization. As Virchow says, all the specific properties of woman's body and all her womanly characteristics, depend upon her ovaries. In other words, a woman is not fully a woman unless her sexual development is natural and complete and in line with a healthy general organization. * * *

Hygienic measures are of the first importance. Fresh air and sunshine are always in order. Exercise is especially indicated for the fat and flabby chlorotic girl, and her diet should be restricted in sugars and starches. The highly active, intellectual girl must rest from her studies and try to become a little lazy. The conservation of the general health and vigor is the chief factor in maintaining safe and easy menstruation. The appetite for wholesome nutriment should be

encouraged, if need be, by stomachic stimulants, such as the official elixir of strychnin, pepsin and bismuth. The use of bromids, coal-tar analgesics and diffusible stimulants at the menstrual periods can be regarded only as a temporary makeshift.

The most constant and positive clinical sign of imperfect puberty is deficiency of the blood in red corpuscles and hemoglobin, the chlorotic type being, perhaps, more common than the simple anemic in relation to menstrual disorders. Hemic defects and malnutrition act reciprocally as cause and effect. The oxidizing life of the blood is in the iron it contains, with about one-twentieth as much manganese. The total iron of the adult body amounts to but 2.5 to 3.5 grams, chiefly in the form of hemoglobin. The normal daily content of iron in the food of an average diet is, according to Stockman, from 5 to 10 milligrams. When absorbed, as in health, this food-iron replaces the metal continually lost by disintegration of blood corpuscles and excretion. The round of iron in the body seems to be from the duodenum to the mesenteric glands, thence to the thoracic duct, the general blood current and the spleen, from whence it passes to the liver to be synthetized into hemoglobin for the red cells, on the breaking down of which the dissociated iron is eliminated by way of the large intestine. * * *

Most authorities conclude that inorganic compounds of iron in order to be absorbed must first be changed to albuminates by combining with food matters. All albuminous substances are hydrolyzed to peptones before they are capable of absorption. Hence it follows that a peptonate of iron is the preparation most likely to be readily and completely absorbed and assimilated. The best remedy of this composition, I think, is Gude's Pepto-Mangan, which I have used for the past ten years with great satisfaction, particularly in the hemic and nutritive disorders of female puberty.

This neutral solution contains 3 grain of iron and 1 grain of manganese in each tablespoonful. The latter ingredient is doubtless to be credited with a large part of the nearly specific effect of the remedy in functional menstrual derangements. The preparation is pleasant to the eye, agreeable to the palate and has the great advantage over inorganic iron compounds of not corroding the teeth, deranging the digestion nor inducing constipation. According to the nature and severity of the case, the dose varies from a teaspoonful to a tablespoonful. It is well taken in milk or sherry just after meals.

The following brief clinical notes may serve to illustrate the facts above stated. The blood count in each instance was made with the Thoma-Zeiss hemacytometer; hemoglobin was calculated by the Hammerschlag specific gravity method. I need hardly remark that the blood findings at the altitude of Denver are normally higher than at points near the sea level.

CASE 1.—Jose K., aged 15 years, thin, delicate and somewhat

strumous, had menstruated irregularly and intermittently for 16 months; erythrocytes 3,600,000, hemoglobin 58 per cent. She was taken out of school, put on a diet largely protein, given aloin, strychnin and belladonna pills for her bowels, and for her blood, Pepto-Mangan (Gude), a dessertspoonful four times daily after eating. Under this treatment she made an average weekly gain of 1½ pounds in weight, about 150,000 red cells and 3 1-3 per cent hemoglobin, and was discharged cured in ten weeks.

CASE 2.—Alice R., aged 18 years, rather stout but pale, with a greenish tinge; complained of palpitation and breathlessness on slight exertion; menstruation barely begun and scanty. She was made to take gradually-increasing exercise on her bicycle, a cold bath every morning, less carbohydrates and more proteins in her diet, and Pepto-Mangan (Gude) in the dose above mentioned. She recovered from her morbid symptoms within four months, and has since married and given birth to two healthy children.

CASE 3.—Amelia B., aged 23 years, an overworked servant, had suffered since the periods first began, nine years before, the flow being prolonged but rather scanty. The red blood cells numbered 3,800,000 per c.m., with proportionate oligochromemia. She was induced to rest at home and take six eggs daily, along with other nourishing food and Pepto-Mangan (Gude), a dessertspoonful four times daily an hour after food. She made a very rapid recovery, the red cells running up to 4,900,000 within two months and the menstrual periods becoming quite normal.

CASE 4.—Flora J., aged 16 years, began to menstruate profusely a year before, since which time she has always been ailing; erythrocytes 3,100,000, hemoglobin 63 per cent. She was given cold baths and massage, a bitter tonic, laxatives and Gude's Pepto-Mangan in dessertspoonful doses. When discharged cured, five months later, the blood count was 4,700,000, hemoglobin 95 per cent.

CASE 5.—Olive M., aged 13 years, blond, thin, active, sensitive, a hard student, just beginning to menstruate, the flow being scanty and accompanied with pain. The blood count was 63 per cent of normal, the color index 57 per cent. Under treatment similar to that mentioned in the first case, she became round and rosy, menstruated freely and easily, took on 17 pounds in weight and raised the blood findings above the normal at sea level, all within eight months.

In conclusion, the writer would like to emphasize the peculiar physiologic efficacy of Pepto-Mangan (Gude) in aiding young girls to a normal womanhood, when the crisis of puberty is complicated with any defect in blood-making and nutrition. Its action is prompt and pleasant, and the clinical benefits derived from its use are readily apparent to all concerned. In curable cases it is as nearly specific as any combination of drugs could be.

Rudolph Ludwig Virchow.**HIS GENERIC THEORY REGARDING CELL LIFE APPLICABLE TO
CLINICAL MEDICINE OF TO-DAY.**

By the death of Rudolph Ludwig Virchow the world lost one whose career is a milestone in the path of scientific medicine. His early life and work was that of a scientific revolutionist. The impregnable fallacies of tissue construction were swept away by the formidable argument which is now to become his greatest monument:—"Omnis cellula a et cellula." To this noted observer are accredited those theories and facts which formed the basis for cellular pathology. Virchow personally claimed no recognition for his research work in cytology. He disclaimed all title to originality in this new field, holding that only as an observer was he first to comprehend the pathologic importance of the individual cell.

In 1842 he advanced the view that the characteristic leukocytes of acute inflammation were the direct result of multiplication of connective tissue corpuscles. This theory incited dispute and stimulated investigation. Addison and Waller contended that white corpuscles passed directly through the walls of a blood vessel. Discussion and research went hand in hand, swinging on the pivot point of the cell, *per se*. Cohnheim definitely proved the identity of the white corpuscles and, while overthrowing the theory advanced by Virchow, acknowledged that the fallacy of the great observer's original contention was based on all future work.

Conclusions deemed adequate to explain the various stages of inflammation were condemned. The cell became the object of critical study. Its histologic relationship to the human economy incited physiologists to undertake experimental work. Pathologists pursued to completeness the study of that intimate association between cell production and morbid growths. From these several lines of thought evolved the conception that the health of the human organism, as a unit, depended on the stability of cell life.

The chemico-biologic activity of the cell is explanatory of the value certain medicinal substances possess in the adjustment of disturbances due to inflammation. There exists an affinity in cellular tissue for hydroscopic fluids. Based on this known property of selectiveness the curative power of a drug must be estimated. Ehrlich's theory of "lateral chains" establishes the preference of the cell for toxins and the converse is equally true. That which is chemically compatible with the construction of the cell body ultimately forms a component part. The selective affinity for food, physical property of locomotion and constant presence in inflammation determined the necessity

of adapting the curative treatment to environment of the life of the cell.

To the general practitioner has been allotted the task of demonstrating the clinical value of all laboratory research. To him belongs the field of clinical medicine. Through his efforts in every-day practice the useful knowledge of the pathologist finds its way to the patient. Thus the patient unwittingly becomes the exponent of convincing truth.

Virchow gave birth to a theory which determined itself into indisputable fact. In direct scientific application to principle Antiphlogistine was constructed. The immediate factor essential for success was the reduction of inflammation. This Antiphlogistine does through the physical process of osmosis. Relief from pain occurs on diminished pressure of the congested tissue. Through the admixture of bland antiseptics the chemical irritation of the nerve ends is neutralized. In every way, chemical physical and medicinal, Antiphlogistine re-establishes the stability of cell life, by acting upon and dispersing the mass of extravasated fluid. Absorption rapidly takes place through the relieved lymphatics. Antiphlogistine is the only medium to impart recuperative energy to the inflamed tissues.

Membranous Complications. (Throat, Bronchii and Lungs).—

Under the above heading we find the following by Walter M. Fleming, M.D., New York City (*Medical Era*, September, 1902). "With all the experience of more than a quarter of a century, in the treatment of winter cough and its complications of laryngeal, bronchial and pulmonary irritability, also dyspnea, asthmatic spasm and, finally, whooping cough — usually the most persistent and tenacious of all of these membranous maladies, I find no one remedy more strongly indicated, or which yields more prompt and satisfactory results than antikamnia & heroin tablets, composed of antikamnia, 5 grains and heroin hydrochloride, $\frac{1}{12}$ grain. The purpose of this combination is manifest at once, for it provides primarily, a respiratory stimulant; secondly, a soothing sedative to the irritable mucous membrane and, thirdly, an antipyretic and analgesic. Result: A prompt and efficient expectorant, which at once relaxes the harsh and rasping cough, and releases the tenacious, sticky and gelatinous mucus, while its soothing influence is at once manifested, greatly to the comfort and contentment of the patient."

A Standard Product. — Eight years ago you submitted to me for consideration, Dioviburnia. My practice is devoted to the gynecological branch of medical science and a therapeutic article of such a

composition and character naturally awakened my interest. It is now more than six years that I have been employing Dioviburnia exclusively, in preference to all other medicinal compounds of like nature, manufactured for physicians' prescription only. I have been reaping the professional benefits of a constant and widely extended clinical experience with this "Standard Product," and if I may be privileged to judge from the remarkably gratifying and encouraging results that such experience has invariably given me, I feel that I am justified in speaking thus upon the subject, "as one having authority and not (altogether) as the scribes." You must realize that every additional and perfect remedial agent which your chemists put into the hands of the medical profession goes just so far in increasing our powers and resources of combating disease and death, and inasmuch as hundreds of my patients, in both hospital and private practice, have profited vastly by Dioviburnia, I feel it to be nothing more than my privilege and duty to inform you of such improvement and satisfaction to myself.

This is an unsolicited expression of my feelings of personal indebtedness and honest appreciation of your product.

Henry Y. Ostrander, 147 State street, Brooklyn, N. Y.

September 11, 1902.

Trophonine in Typhoid Fever.—In a case of typhoid fever where the patient could not tolerate a single ounce of milk, Trophonine was used with marked success. Practically no tympanites developed during the course of the disease. I regarded the extreme distaste for milk as a calamity and was forced to use Trophonine exclusively, but after it had demonstrated its value the "calamity" turned out to be a blessing. I have used many kinds of artificial and natural foods but none of them have, in my experience, given the marked success of Trophonine.

A Sick-Room Safeguard.—"I have never had a contagious disease spread where the patient has been isolated and Platt's Chlorides has been used. I have used the preparation for years, and it does the work so thoroughly that I look for no other."

Charles H. Howland, M.D., New Haven, Conn.

Cure for Hiccough.—In an obstinate case of hiccough, lasting eight days, as a dernier resort, I prescribed Neurosine; two doses gave prompt and permanent relief. The patient was at certain intervals subject to the most violent attacks of hiccough, the last one seriously threatening his life. Neurosine effectually prevented any subsequent attack. I regard the cure as permanent. W. H. Farrar, M.D.,

¹DeSoto, Mo.

Modern Methods.—Progress in the treatment of diseases of women has kept pace with the advances made in general medicine. The physician who subjects a patient suffering from endometritis, leucorrhea, vaginitis, etc., to the disagreeable tamponing of the vagina with boroglycerid, etc., will find her leaving him for the modern and up-to-date practitioner. Micajah's Medicated Uterine Wafers are astringent, antiseptic and alterative, and when inserted into the vaginal canal up to the uterus, slowly disintegrate and offer a treatment for the above conditions which is most effective and satisfactory to the patient and doctor alike. No powder to spill nor water to soil the clothing. Write to Micajah & Co., Warren, Pa., for samples.

New Orleans Polyclinic.—Sixteenth annual session opens November 3, 1902, and closes May 30, 1903. Physicians will find the Polyclinic an excellent means for posting themselves upon modern progress in all branches of medicine and surgery. The specialties are fully taught, including laboratory work. For further information address New Orleans Polyclinic, Postoffice box 797, New Orleans, La.

Borobenphene in Digestive Troubles.—It has been my great pleasure to use Borobenphene-Heil in my practice with very gratifying results in digestive troubles and all forms of stomach diseases. In cholera infantum, diarrhea and dysentery I first give a little mercury and bismuth alternately with Borobenphene until I get the effect of the mercury and bismuth, then dropping the mercury and bismuth, I continue the Borobenphene until recovery of the patient. I have been practicing medicine for more than thirty years and can freely say that I have found nothing as near a specific as Borobenphene-Heil for the above mentioned diseases. U. M. McCombs, M.D., Jackson, Mo.

Coca as a Heart Tonic.—We are accustomed to consider the term stimulant as a something which acts as a whip to goad the animal on to greater physical exertion, following which there is a corresponding period of depression. Whether this be true or not, there are conditions where any means may be allowable and necessary as in passing some slough of extreme emergency when the physician stakes all on the success of his measures Properly such an application of stimulant belongs only to an alcoholic, but owing to the paucity of terms in concise definition, other substances are also pronounced to be stimulants which do not possess these qualities. Because of this association of terms in substances differing in properties they are all commonly considered as of identical action with alcohol. Coca is therapeutically classed as a nervous stimulant but, unlike any other substance, its use is not followed by depression The action of Coca is unique.

Primarily it effects the cerebral cells but with this it has a depurative influence on the blood, freeing the circulation from waste and, because of this, rendering the possibilities for repair in every organ of the body favorable. Owing to the subtle action of Coca on the muscular structure, it has rightly been advocated in disease of the heart associated with muscular deficiency. Unlike digitalis it does not simply increase muscular power, an effect which in certain cases might be a disadvantage, but by a chemico-physiologic change induced in the muscular substance it aids toward repair, a process which is augmented through a purified blood stream. The ideal of a tonic stimulant the use of which tends to the permanent betterment of any depressed condition, is presented in Vin Mariani, which embraces the true qualities of the whole Coca leaf selected under special facilities, and scientifically preserved in a mild and wholesome wine.

Chronic Nasal Catarrh. — Being myself the unhappy possessor of a case of chronic nasal catarrh, which had run the gauntlet of treatment, out of desperation I commenced the use of Germiletum and have experienced the most satisfactory results. I now always prescribe Germiletum where I want an alkaline antiseptic.

R. S. Lanterman, M.D., Los Angeles, Cal.

Mineral Waters. — Dr. James K. Crook, of New York, in a recent issue of the *Medical Record*, had an article on "Mineral Waters," from which we extract the following: It can not be denied that in the saline purgative group our native waters do not equal in mineral richness those to be found in Europe. We have no analogy of Carabaña, which is the strongest water in the sulphated saline class, containing as it does 7,391 23 grains of solid mineral contents per U. S. gallon, and which is exceedingly strong in sodium sulphate, while containing but very little magnesian sulphate.

Carabaña is three times as strong in purgative salts as the Hungarian bitter waters. It is much pleasanter to take and acts quickly, yet mildly, in insignificant doses—one tablespoonful to a wineglassful. Prof. S. G. Gant, the noted rectal specialist, recently referred to it in one of his lectures at the New York Post-Graduate Hospital as a particularly valuable ante- and post-operative cathartic.

An interesting monograph has been written on Carabaña Water by the well-known French medical writer, Dr. Monin, a copy of which can be had free on request of George J. Wallau, No. 2 Stone street, New York.

